

CULTURALLY SENSITIVE ADAPTATION OF PREPARE WITH JAPANESE PREMARITAL COUPLES

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In this study, we attempted to achieve a culturally sensitive adaptation of the PREmarital Personal And Relationship Evaluation (PREPARE) Inventory with Japanese premarital couples (n = 849). A translation, back-translation, and construct modification process was initiated by a group of U.S. and Japanese researchers to ensure a culturally sensitive and applicable adaptation of PREPARE. Alpha reliability analyses revealed good internal consistency among Japanese PREPARE scales. A Japanese premarital couple typology was developed using cluster analyses. Several unique features of the Japanese premarital types are identified and discussed. Suggestions are provided for continued enhancement in adaptation process of PREPARE with Japanese premarital couples.

Is marriage as a social institution in crisis in Japan? As Japan enters a new millennium, this provocative question appears to be a valid concern given several demographic and social trends. In 2002, the divorce rate was at an all time high of 2.3 individuals per 1,000 since the Japanese government first started measuring the divorce rate in 1899 (Ministry of Health, Labor and Welfare, 2004). The divorce rate in Japan increased by greater than threefold (315%) between 1963 and 2002 (Ministry of Health, Labor and Welfare, 2004). According to Iwai (2001), "The probability of first marriages ending in divorce was one in every ten couples in 1965, but it had increased to one in every five couples by 1990" (p. 55).

A closer look at the timing of divorce reveals another intriguing aspect of this social trend. In 1996, more than 40% of all divorces in Japan occurred within 5 years of marriage, and the likelihood of divorce decreased as the duration of marriage increased (Iwai, 2001). This is consistent with the data from the U.S. (Olson & Olson, 2000).

However, the high divorce rate was also observed among couples who had been married for more than 20 years. More than 16% of divorces occurred among couples in this cohort. Iwai (2001) gives a very plausible explanation for the increase in the incidence of divorce among so-called "empty nesters" from the life-span and economic perspectives. Iwai argues that many Japanese women feel disenchanted about spending their life alone with their husbands after spending many years rearing their children. As women more commonly enter the workforce, and economic independence becomes more attainable, some middle-aged women might question their marriage openly, and some might choose divorce.

Meanwhile, the marriage rate in Japan has been stagnant throughout the 1990s (Ministry of Health, Labor and Welfare, 2004). Many young Japanese adults are getting married at increasingly older ages, or choosing not to marry. In fact, the average marriage age in Japan is the highest in the world (Appibbaum, 1995). In 2001, the average marriage age was 29.0 for men and 27.2 for women (Statistical Handbook of

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This article is based on a doctoral dissertation by Shuji G. Asai, entitled "Premarital Relationships among Japanese Couples Based on PREPARE."

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Japan, 2003). This trend is particularly noticeable among women, as their average age for marriage, since 1990, has increased more sharply; from 25.9 to 27.2 for women and from 28.4 to 29.0 for men (Statistical Handbook of Japan, 2003).

Marriage woes in Japan are projected to continue during the next decade due to a continued increase in the divorce rate and the climbing marriage age. The contextual picture of Japan clearly attests to the need for premarital research and premarital education programs. Divorce often happens within 5 years of marriage, indicating inadequate premarital preparation among many couples. Divorce is also common among couples that are experiencing the empty-nest stage of their relationship, perhaps indicative of a neglected and weak dyadic unit. Furthermore, the fact that young Japanese adults are marrying later in life, if at all, also underscores the importance of premarital research that explores the premarital relational dynamics of Japanese couples.

The main purpose of this study is to develop a culturally sensitive and scientifically sound premarital inventory for Japanese couples. The PREmarital Personal And Relationship Evaluation (PREPARE) inventory (Olson, 1997; Olson, Fournier, & Druckman, 1987) was examined for its cultural and research applicability with Japanese engaged couples. In this article we will delineate the process and procedure of adapting and reconstructing PREPARE to fit the needs of Japanese couples preparing to marry. The current study is based on Japanese engaged couples ($N = 849$ couples) who took the Japanese version of PREPARE between 1993 and 2002. Because the study is exploratory in nature, a particular emphasis will be given to evaluating the cultural applicability of the constructs and items measured by PREPARE (face and content validity), as well as the PREPARE scales' alpha reliability.

Our endeavors in this study are both significant and appropriate as there is a strong need for a study that examines the issue of premarital relationships using cross-cultural populations (Fowers, Montel, & Olson, 1996). Most premarital research in the U.S. has been based on predominantly Caucasian samples (i.e., Holman, Linford, et al., 2001; Markman, 1979; 1981; Markman, Floyd, Stanley, & Storaasli, 1988; Stanley et al., 2001). Historically, premarital prediction studies in the U.S. either fail to acknowledge cultural issues conceptually and methodologically or simply categorize them as a background factor.

A typological analysis was also conducted to classify Japanese premarital couples into different types based on the couples' systemic and relational qualities. Cluster analyses were performed to examine the number of couples types as well as qualitative characteristics of each premarital couple type. The results were compared with the U.S. norms described in Fowers and Olson's study (1992) to delineate the compatibility and possible cultural differences between the two populations. Future suggestions are provided for using PREPARE as a premarital assessment tool with Japanese premarital couples.

CONSIDERATIONS IN ADAPTING A PREMARITAL INVENTORY CROSS-CULTURALLY

It has been suggested that paper-and-pencil measures are not the most culturally sensitive method of gathering data, given that the norms are often based on European middle-class families or couples (Conoley & Bryant, 1995). However, we strongly believe that it is possible to establish a culturally sensitive adaptation of a premarital inventory (paper-and-pencil measure) if several considerations are taken into account.

First, the cross-cultural applicability of premarital constructs and concepts must be carefully established. Conoley and Bryant's (1995) critiques of several family assessments with regard to their cultural insensitivity focus primarily on the cultural inapplicability of some constructs/concepts. Although many couple and family assessments (most certainly many premarital inventories) do lack cultural applicability, it is not solely due to their methodology (paper-and-pencil) but also due to the lack of efforts to establish cultural sensitivity and applicability through a carefully designed adaptation process.

For instance, it is essential that family researchers place current premarital relationship issues in the historical and cultural contexts in which particular familial structures are imbedded (Gottman, 1994). Premarital courtship might have a different meaning within certain cultures where arranged marriages are the norm rather than the exception. Some cultures might be experiencing social change that creates a tension between traditional family structures that emphasize extended family supports and approval of premarital

relationships, and more dyadic and gender equality-based relationships. These contextual factors must be incorporated into a premarital inventory as culturally applicable constructs.

Typically, a cross-cultural couple or family study involves comparing two or more populations (often a Euro-American group and an ethnic minority group) using an established inventory (or norms of the Euro-American group) through confirmatory factor analysis or construct validity coefficients (see Knight, Tein, Shell, & Roosa, 1992). Rarely is it the case that content experts from both the original Western creators and the minority group engage in a collaborative discourse to discern the cultural applicability of the inventory prior to using it with a particular population. This collaborative process is critical, given that there might be a particular construct based on Euro-American norms that needs to be altered or changed to better reflect the cultural and familial patterns unique to the population. As described in more detail later in the research design section, we did encounter the cultural mismatch between a PREPARE construct and the Japanese familial practice. It helped us tremendously to have an on-going discussion between U.S. and Japanese researchers to achieve cultural sensitivity, even when that meant making rather drastic changes to a PREPARE scale.

Language is another layer that greatly influences the cultural sensitivity and applicability of a premarital inventory. Because we examined the cultural applicability of PREPARE with Japanese premarital couples residing in Japan, it was required that PREPARE be translated into Japanese. It is extremely important for the researchers to be transparent about both the translation and the validation process of a premarital inventory with its cultural sensitivity and applicability. In light of the vulnerability of a self-report instrument (paper-and-pencil) to data contamination (i.e., social desirability, memory decay, and memory reconstruction), it is of particular concern when using a translated version of the instrument with a cultural group whose language and culturally specific norms and practices differ from those of the language and culture in which the instrument was originally written. The translation and validation process must aim at achieving a cognitive and cultural understanding with participants by being conscientious about how the respondents' answers can be shaped by how the questions are worded, formatted, and placed in a specific context, such as language and culture (Schwarz, 1999).

Thus, the translation process should go beyond the word-to-word semantic translation. Rather the process should be used to establish the content validity of the inventory with the particular population. Once the translation is done, the inventory must go through rigorous scientific testing for its reliability and validity with the population (Lewinsohn & Werner, 1997).

Carroll and his colleagues (2001), using a "Serial Approach" developed by Herrera, DelCampo, and Ames (1993), provided the standard process for ensuring the accurate and culturally sensitive translation of a premarital/marital inventory, RELATionship Evaluation questionnaire—RELATE (Holman, Busby, Doxey, Klein, & Loyer-Carlson, 1997) into Spanish. Six steps included in the process are: (a) Translating by committee (taking into account sociocultural factors of a population); (b) assessing clarity and equivalence; (c) back-translating (by individuals with varying educational backgrounds); (d) field-testing with both monolinguals and bilinguals; (e) assessing reliability (test-retest reliability of monolingual and bilingual groups); and finally (f) interpretation (through interviews of members of monolingual and bilingual groups). Throughout these steps, Carroll et al. (2001) emphasized that the translation team must include both native target-language bilinguals (NTLBs; in this case Spanish) and native source-language bilinguals (NSLBs; English). Thus, the process of translation must specify "how" the process evolved and "who" produced the document (Carroll et al., 2001).

In summary, adapting a premarital instrument cross-culturally requires sensible and conscientious efforts by family researchers from both cultures. Throughout this article, we will attempt to report clearly how we faced these issues in our adaptation process of PREPARE with Japanese couples and the steps we took to ensure cultural sensitivity and applicability of the inventory.

AN ECOLOGICAL PERSPECTIVE AND PREPARE INVENTORY

Larson and Holman (1994) and, more recently, Holman and Linford (2001) used the ecological perspective to conceptualize premarital factors into three eco-systemic areas: (a) Background and contextual

factors, (b) individual traits factors, and (c) couple interactional process factors. Because of space constraints, the readers are referred to comprehensive literature reviews based on the ecological perspective of previous premarital studies by Larson and Holman (1994) and Holman and Linford (2001).

The ecological perspective is used as the conceptual framework for the current study since premarital factors are often complex and multi-leveled, encompassing all three ecological factors. Furthermore, the ecological perspective should provide the appropriate conceptual fit for the current study that explores the contextual factors that affect premarital relationships in Japan.

Conceptually, the ecological perspective is congruent with the PREPARE relational scales (Olson & Olson, 1999). The background and contextual factors are assessed by the PREPARE's external factors, including background items (age, income, education, and occupation), Family Closeness, Family Flexibility, Family and Friends, and Financial Management scales. The individual traits and behaviors factors can be analyzed using the PREPARE's intrapersonal factors including, Leisure Activities, Personality Issues (temper, moodiness, jealousy, and possessiveness), Realistic Expectations, and Religious Orientation scales. Finally, the couple interactional processes factors are examined through the PREPARE's interpersonal factors: Children and Parenting, Communication, Conflict Resolution, Equalitarian Roles, and Sexual Relationship scales.

The ecological perspective serves as a conceptual guide throughout this article. It also provides the framework for the broad research questions this study explores: (a) Does the translated Japanese version of PREPARE have high levels of cultural applicability (face validity) and internal reliability? And (b) is the premarital couple typology among Japanese couples based on PREPARE qualitatively different from the U.S. premarital couple types?

The ecological perspective should sensitize us in our efforts to establish cross-cultural applicability of PREPARE. Contextual factors, such as increasing divorce rate in Japan and the importance of the extended families' role on mate selection and marriage process are woven into the research questions. Our intention here is to keep a window open for potential cultural differences so that we will be less biased in the validation process of PREPARE and interpretations of the findings. For instance, if we find both similarities and differences between the Japanese and U.S. PREPARE premarital typologies, the ecological perspective should facilitate culturally sensitive interpretations of these comparative data for future clinical and research use.

METHOD

Participants

Participants in this study were 849 engaged couples (1,698 individuals) obtained from a nonprobability and nonclinical sample in Japan between 1993 and 2002. Participant sources included self-referral, family referral, and agency-referral (e.g., churches). Thus, the participants of this study are characterized as a convenience sample.

The mean age of the participants was 29.3 ($SD = 3.89$; range = 22–55) for males and 27.1 ($SD = 3.26$; range = 20–51) for females, which is fairly close to the national average marriage age in Japan for both men (29.0) and women (27.2) in 2001. Most of the participants had never been married, with a very small percent (about 1%) of individuals being either divorced or widowed.

The current living arrangement revealed a salient gender difference; although more than one-half of males lived alone, more than 80% of females lived with their parents. About one-third of the men lived with their parents. The majority of the individuals (close to 80%) in this study lived in a large city with a (population of $\geq 100,000$).

In terms of education, the participants were fairly well educated, with greater than 80% of both men and women had some college education. The descriptions of employment showed that most of the participants belonged to "white-collar" occupations, as only seven males (0.8 %) worked as factory workers or laborers. About one-fourth of the female participants were unemployed as opposed to less than 1% of males. There was also a strong discrepancy in annual income between males and females. About one-fourth ($N = 214$) of females reported having no individual income, whereas less than 1% of males fit in this income

bracket. Finally, about one-third of men had an income of \geq \$54,000 (U.S. dollars), but only about 2% of women earned this much.

Measure

Psychometric properties of PREPARE with a U.S. population. Previous research has demonstrated the strong psychometric properties of PREPARE with high levels of reliability, validity, and clinical utility (Olson, 1997; Olson & Olson, 1999). The alpha reliabilities for the PREPARE scales ($n = 1,742$) indicate internal consistency with the coefficients ranging from .75 to .85, with a mean reliability of .79 (Olson, 1997). Test-retest reliabilities of PREPARE ($n = 472$) over a 4-week period range from .74 to .93, with a mean of .81 (Olson, 1997).

PREPARE individual and Positive Couple Agreement (PCA) scores. The PREPARE scales provide both individual scores (his and her perspectives) and couple scores (dyadic measurement). The couple scores are called Positive Couple Agreement (PCA) scores, given that they measure the couple's agreement in their perception of relationship quality in positive terms. The actual PCA score for each scale constitutes the percentage of items both partners describe in positive terms. PCA scores can range from 0% to 100%. In this study, we use both PREPARE individual and PCA scores in its descriptive data analyses.

Research Design and Procedure

Phase I of the study was done between 1993 and 2002 and included the following steps: (a) Adaptation, translation, and content analysis of PREPARE by a team of Japanese and U.S. family scholars who have extensive knowledge of the inventory as well as of the premarital and marital relational dynamics in Japan; (b) recruitment of the research participants via a Japanese branch of PREPARE/ENRICH Inc.; (c) administration of the Japanese version of PREPARE to the engaged couples; and lastly (d) data collection. All the steps were coordinated and administered by the PREPARE revision group.

The Japanese version of PREPARE. Initial translation and adaptation of PREPARE into Japanese was conducted in 1992 prior to the collection of data.¹ The translation procedure involved a group of Japanese and U.S. family scholars and therapists who had extensive knowledge of the inventory as well as the conceptual understanding of the premarital and marital issues in Japan and the U.S.

The group members included the original PREPARE developer (the second author), an American couple therapist (male) who had lived and practiced premarital and marital therapy in Japan for 15 years, and two Japanese couple therapists (male and female) who had graduate degrees from the U.S. The original PREPARE developer served as the construct and content expert of the inventory. The U.S. therapist is a native source-language bilingual (NSLB), and had extensive experience and knowledge of premarital issues and contextual factors that affect many Japanese engaged couples. The two Japanese therapists are native target-language bilinguals (NTLBs), with a good knowledge base in premarital theories and research in the U.S., as well as clinically based experience working with Japanese couples.

The initial translation of PREPARE into Japanese was performed by the U.S. therapist (NSLB). The translated version was examined by the two Japanese therapists (NTLBs) for its grammatical accuracy and cultural appropriateness of the terminology used. Then, the Japanese PREPARE items were back-translated into English by the Japanese therapists, and the results were reviewed by both the NSLB and the PREPARE developer as well as by the NTLBs for clarity and accuracy. Thus, the translation process was examined twice for cultural and linguistic sensitivity by the use of the NSLB and NTLBs.

During the initial translation process, the question was raised regarding the cultural sensitivity of one of the PREPARE scales with Japanese engaged couples. Both the NSLB and the NTLBs agreed that the Religious Orientation scale appeared to lack the cultural and familial applicability with the Japanese premarital couples because: (a) Religions in Japan function in a more ritualistic way (Bauer & Carliquist, 1965), (b) their practice is deeply imbedded in their familial system at a more subconscious level (Reischauer, 1981), and (c) different religions are not mutually exclusive for many Japanese (about 60% of the participants in this regarded themselves as belonging to other types of religion than major religions, such as Buddhism, Shintoism, or Christianity).

Consequently, such items from PREPARE as "My partner and I disagree about some of the teachings

of my religion" or "In loving my partner, I feel that I am able to better understand the concept that God is love," that are more based on the Judeo-Christian tradition, do not quite resonate with the shared meaning of religion among Japanese. Thus, it was decided by the PREPARE revision group that the Religious Orientation scale be dropped from the Japanese version of PREPARE.

To create a new PREPARE scale that was more culturally sensitive and applicable to Japanese couples preparing to marry, the PREPARE revision group members brainstormed the common premarital issues that affect the couples most significantly. The group started this process by writing out questionnaire items, then inductively reviewing them for the common themes. A theme that repeatedly emerged had to do with the premarital couple's relationship with their parents and future in-laws. The group's consensus was that such cross-generational issues as whether or not to live with the parents or the parents-in-law after marriage and the question of providing the care for aging parents had real significance for many young Japanese adults.

The PREPARE revision group finalized the 10 items that most appropriately assessed the extended family issues that affect many Japanese premarital couples. A new PREPARE scale was named the Family Cooperation scale (see Appendix for the list of 10 items). The term cooperation implies an on-going and continuous nature of the extended family network for the premarital couples after their marriage. "Cooperation" also emphasizes the reciprocal nature of the relationships in which parents and parents-in-law might continue to support the couples financially, whereas the couples later reciprocate by providing financial and physical caregiving to aging parents.

It is important to note that the Family Cooperation scale is conceptually distinct from the Family and Friend scale in its developmental foci. The Family Cooperation scale examines the premarital couple's perceptions of the on-going and/or future relationship dynamics with parents and parents-in-law after the marriage, and the Family and Friend scale is more focused on the premarital approval and support by the family and friends leading up to the marriage.

Next, the Japanese version of PREPARE (with a new Family Cooperation scale and without the Religious Orientation scale) was field-tested with 849 Japanese engaged couples between 1993 and 2002. A Japanese branch of PREPARE/ENRICH, Inc. recruited the couples mostly through churches that required the marrying couples to go through premarital counseling and preparation (many Protestant and Catholic churches in Japan follow the U.S. premarital preparation process). Interestingly, only 2.6 % ($n = 22$) of males and 5.7 % ($n = 49$) of females among the 849 couples in this study self-identified as Christian. However, getting married in a church (or a chapel as many Japanese would say) is a very popular practice among many young Japanese couples, because they view this option as more romantic than a traditional Shinto wedding. Thus, even though many couples in the current study might view themselves as Buddhists or Shintoists, they might not have objected to the idea of having their wedding at a chapel. This provides a further validation of the decision made by the PREPARE revision group to drop the Religious Orientation scale, as the participants in this study certainly showed their more open attitudes toward accepting a religious practice other than their own.

The authors of this article designed and implemented Phase II of the research project. The authors of this study engaged in the following research procedure: (a) Translating the Japanese version of PREPARE back into English (by the first author) for the second time to determine the semantic and conceptual appropriateness of the translated version; (b) evaluating the scientific aspects of the Japanese PREPARE by examining the face validity of PREPARE scales and corresponding items, and the internal consistency (alpha) of the scales; and lastly (c) conducting descriptive analyses.

RESULTS

Face Validity of the Japanese Version of PREPARE

The Japanese version of PREPARE was examined by the first author who speaks both Japanese and English fluently (a NTLB) to ensure the validity of the Japanese items linguistically and conceptually. Because he was not a part of the original PREPARE revision team, he provided an additional source of validation to the Japanese PREPARE.

Overall face validity of Japanese items was supported as item-by-item reading of the translated items

revealed no awkwardness in wording, which typically accompanies a simplistic word-to-word translation. The Japanese items of PREPARE employed the appropriate Japanese terms that are commonly used to describe couple and family relational issues. Thus, the likelihood of misinterpretations or misconceptions of the Japanese PREPARE items by the participants seem to be slim.

All 125 Japanese items were then translated back to English for the second time. To ensure a blind review process of the back-translation, Japanese items were translated without any reference to the original English version of PREPARE. After all items were back-translated, each item was compared to the original version, line-by-line.

Results of back-translation revealed the appropriate face validity of the PREPARE Japanese version in comparison with the U.S. version for the majority of items. Back-translation revealed, however, one item for which the original meaning of the text appeared to be altered unintentionally because of translation issues. Original item 59, "Having children will probably put additional strain on our relationship" was intended to be a positive statement, reflecting the couple's realistic understanding of having children and its impact on their relationship. However, the translated version, "Having children probably will create *unnecessary* stress on our marriage" could be interpreted as a negative statement because of the adjective "unnecessary" used in the statement. The term "unnecessary" has a strong implication that children are unwanted or troublesome. Therefore, the item was reverse-coded, given that the negative response (Strongly disagree or Disagree) to the item should be regarded as a positive relational quality rather than negative.

Internal Consistency Reliability

Because the overall face validity of the Japanese PREPARE was demonstrated, the next step was to examine the inventory's internal consistency. We took Carroll et al.'s (2001) "Serial Approach" a step further by running alpha reliability analyses, rather than test-retest reliability, so that the internal consistency across the Japanese PREPARE scales could be validated. Given that the Japanese version of PREPARE underwent a scale reconstruction (development of Family Cooperation scale), ensuring high internal consistency across the Japanese PREPARE scales was particularly critical. The initial results yielded the average alpha of .67 among 13 PREPARE scales, ranging from a low of .52 (Leisure Activities) to a high of .82 (Family Cohesion; see Table 1). The newly developed Family Cooperation scale showed a fairly adequate reliability with alpha coefficient of .69.

Because the initial analysis for some scales failed to meet the acceptable level of average alpha coefficient of .70 (Whitley Jr., 1996), further item-by-item analyses were conducted to identify the problematic items. Nine items of the 125 items determined as "problematic" include: item 82 from Realistic Expectations, 30 from Personality Issues, 84 from Leisure Activities, 49 from Children and Parenting, 27 and 108 from Family and Friends, 43 and 97 from Equalitarian Roles, and 125 from Family Adaptability. These nine items were deleted from the corresponding seven PREPARE scales. (See Appendix for the list of deleted items.)

Eliminating the nine problematic items yielded the acceptable average alpha of .70 for the 13 Japanese PREPARE scales (see Table 1). As expected, the alpha coefficients of all seven PREPARE scales with one or more problematic items improved as a result of item deletions (see * in Table 1). Overall, Japanese scales demonstrated a slightly lower internal consistency than the U.S. sample (PREPARE Version 1987) that had the average alpha of .74 (Olson et al., 1987), except for the personality issues and family cohesion scales. New PREPARE individual and PCA scores for 849 couples were computed using a total of 116 items (9 times deleted) instead of 125. The following typological analyses were done using the modified PREPARE PCA scores.

Japanese Premarital Couple Typology

Previous typological studies (U.S. PREPARE couple types by Fowers & Olson, 1992; five ENRICH marital types by Fowers & Olson, 1993; seven ENRICH marital types by Lavee & Olson, 1993; and five African American marital types by Allen & Olson, 2001) were used as a methodological guide in developing Japanese couple types. The Japanese premarital couple typology, based on 11 PREPARE scales, was developed in two stages. First, a hierarchical cluster analysis (average linkage within groups with Euclidean

Table 1
Internal Coefficient Alpha

PREPARE scales	Japanese version (N = 1,698) Before items deleted	Japanese version (N = 1,698) After items deleted	U.S. version 1987 ^a (N = 34,050)	U.S. version 2000 ^b (N = 1,742)
Realistic expectations*	.60	.63	.73	.78
Personality issues*	.76	.79	.77	.79
Communication	.71	.71	.78	.78
Conflict resolution	.70	.70	.72	.81
Financial management	.70	.70	.75	.75
Leisure activities*	.52	.58	.63	.76
Sexual relationship	.70	.70	.70	.78
Children and parenting*	.70	.73	.62	.82
Family and friends*	.63	.64	.70	.79
Equalitarian roles*	.56	.64	.78	.78
Family cooperation (Religious orientation for U.S. version)	.69	.69	.85	.85
Family adaptability*	.59	.70	.84	.84
Family cohesion	.82	.82	.75	.75
AVERAGE	.67	.70	.74	.79

Note. Scales with * had one or more items deleted
^a Olson et al. (1987)
^b Olson (1997)

distance) was conducted with 270 randomly selected couples to seek the optimal number of cluster solutions. A smaller number of cases is recommended for the hierarchical cluster analysis as this clustering method is more susceptible to the influence of outliers that may lead to unstable solutions (Lavee & Olson, 1993).

Agglomerative coefficients suggested inconclusive solutions, ranging from three to five clusters. A series of multivariate analyses of variance (MANOVA), univariate analyses of variance (ANOVA), and post hoc tests revealed that Japanese premarital couples were better differentiated using either the three- or four-cluster solution. Fowers and Olson (1992) found four PREPARE premarital types, which provided a convenient benchmark, pointing to the four-cluster solution. Plotting of the mean PCA scores among different solutions also provided the visual aid for selecting the 4-cluster solution, as evidenced by distinctive gaps among the among clusters.

K-means cluster analysis was then conducted with the number of clusters set at four. K-means method was chosen as a cross-validation method, because it can handle a larger number of cases than the hierarchical method (Lavee & Olson, 1993). Using the total sample ($N = 849$), the K-means cluster yielded a very stable solution nearly identical to the profile obtained through the hierarchical cluster method. Figure 1

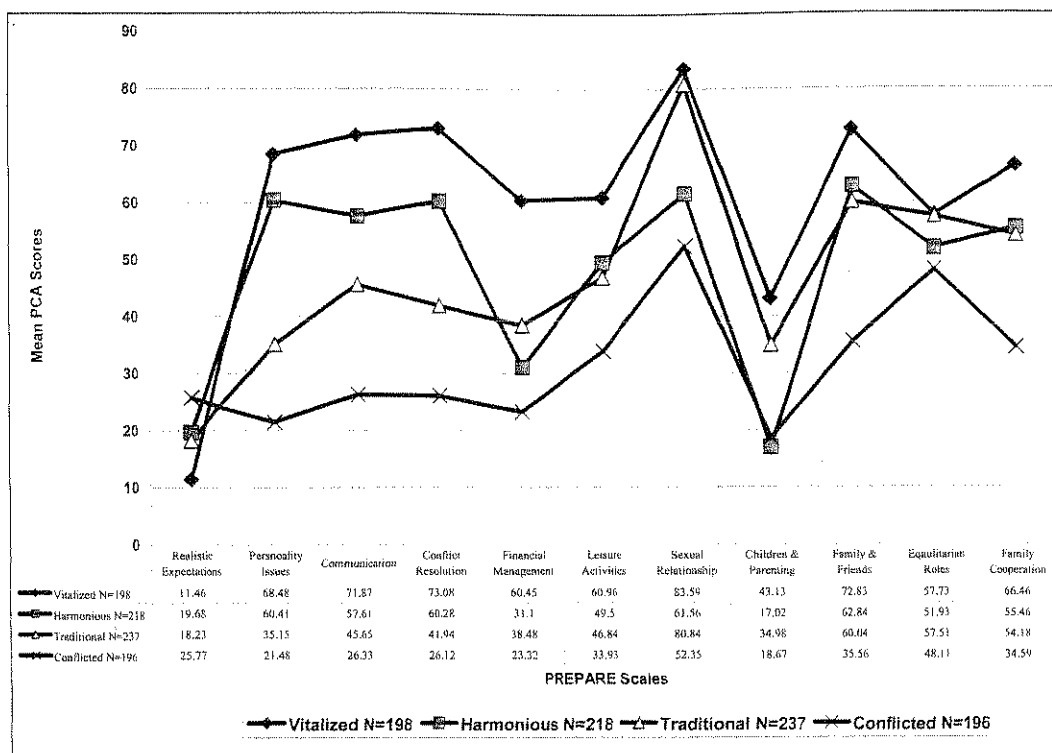


Figure 1: Japanese premarital types based on K-Means clustering method ($N = 849$)

shows the final profiles of the four Japanese premarital couple types.

In comparison with the U.S. premarital types, there is convincing evidence that the four Japanese premarital types were fairly similar to the types found by Fowers & Olson (1992) (see Figure 2). Overall, both Japanese and U.S. profiles have noticeable dips in the PCA scores on Financial Management and Children and Parenting scales, and relative peak points for the Sexual Relationship scale across the couple types.

In terms of dissimilarity, Japanese profiles displayed distinctively lower PCA scores on Realistic Expectations, indicative of the rather unrealistic ideology the Japanese couples had for the future marriage. Children and Parenting PCA scores were also lower among the Japanese types. Finally, Family Cooperation was used for the Japanese profiles in lieu of Religious Orientation for the U.S. profiles, so these two scales could not be directly compared.

Because of the overall similarity between the Japanese and the U.S. profiles, the four Japanese premarital types were given the same nomenclature of vitalized, harmonious, traditional, and conflicted. Next, the profiles of four Japanese premarital types are presented in descending order of their average PREPARE PCA scores.

Profiles of four Japanese premarital couple types. Vitalized couples ($n = 198$; 23.3%) showed high relational functioning in all 11 scales except for Children and Parenting (43) and Realistic Expectations (11.5). The vitalized couples had the highest mean PCA scores of any groups with an exception of Realistic Expectations. Both PCA scores and the profile shape are very similar to the vitalized couples in the U.S., except Japanese type had slightly lower PCA scores across relational dimensions (see Figure 2). The vitalized couples appear to have a balanced view regarding the importance of their immediate individual traits and interpersonal concerns (i.e., personality issues, communication), as well as the future external concerns (i.e., family cooperation, future financial plans).

Harmonious couples ($n = 218$; 25.7%) demonstrated moderately high overall relationship quality on

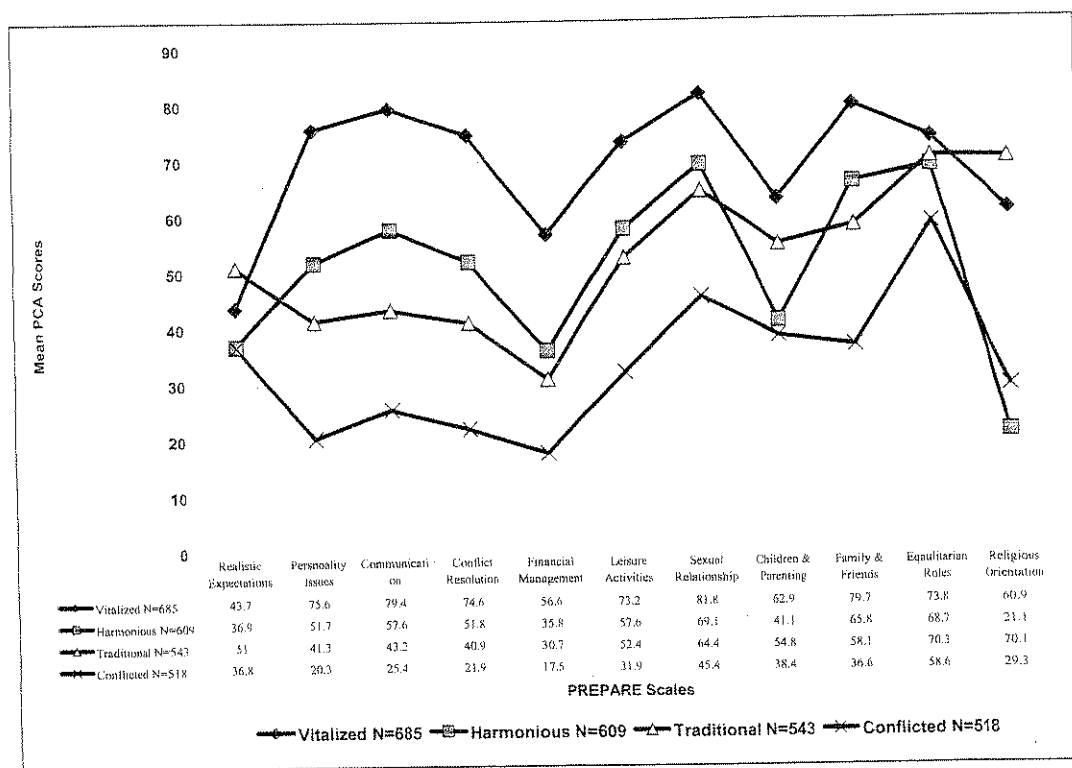


Figure 2. U.S. premarital types ($N = 2,355$), Fowers and Olson (1992); Olson (1997). Reprinted with permission from Life Innovations, Inc.

PCA scores, with the exceptions of Realistic Expectations, Financial Management, and Children and Parenting. The harmonious couples displayed more agreement on immediate individual traits and interpersonal areas (Personality Issues, Communication, Conflict Resolution) and external issues (Family and Friends). In terms of time-orientation, similar to the U.S. harmonious type, these couples appeared to be more concerned with their immediate internal harmony, and less with future-oriented issues, such as financial planning (31) or children and parenting (17). The Japanese harmonious couples, however, had a moderately high score on Family Cooperation, indicative of the on-going importance of parents and in-laws for their future marriage.

Traditional couples ($n = 237$; 27.9%) are characterized by their moderately low functioning (between 30 and 45) in the individual and interpersonal domains (Communication, Personality, Conflict Resolution), compensated by their moderately high (55–63) relationship quality around the external and contextual relational areas (i.e., Family and Friends, Family Cooperation). The term traditional was used to describe their relative strengths in more traditional relational areas (i.e., extended family network). The PCA Equalitarian Roles scores were moderately high among the traditional couples. However, analyses of their individual scores revealed that this was a reflection of their general agreement about traditional roles rather than a specific endorsement of equalitarian roles. Both men and women in this group shared more traditional gender roles.

The U.S. traditional type is more easily discernable mainly for their elevated Religious Orientation scores (see Figure 2). The Japanese version also differed from the U.S. type in their more elevated Sexual Relationship scores. Nonetheless, the Japanese traditional type clearly mirrored the similar patterns of higher external strengths and lower interpersonal quality among these couples (Fowers & Olson, 1992).

Conflicted couples ($n = 196$; 23.1%) displayed very few relationship strengths in all 11 PREPARE

scales, as they had the lowest mean PCA scores of any couple types except for Children and Parenting and Realistic Expectations. Only Sexual Relationship (52) and Equalitarian Roles (48) had moderate PCA scores. The conflicted type can be characterized by their lack of relational resources in all three ecological areas: contextual, individual, and interpersonal areas. The Japanese profile for the conflicted couples was very similar to the U.S. profile except for a fairly distinctive dip with Children and Parenting among the Japanese couples.

Distinctiveness of each Japanese couple type. A MANOVA indicated that the PCA means for 11 PREPARE scales were all significantly different ($F = 113.1, p \leq .0001$) among the four couple types, demonstrating the distinctiveness of each couple type. The multivariate eta squared of .554 also attests to the effectiveness of four couple types in differentiating relational qualities, given that close to 60% of the variance among the 11 scales were explained by the four couple types.

Follow-up ANOVA with the 11 PREPARE scales also yielded significant results (all $p \leq .0001$), indicating that the four couple types were well differentiated in each of the 11 scales (see Table 2). The five premarital dimensions, Personality Issues, Conflict Resolution, Communication, Family Friends, and Sexual Relationship were best discriminators (see partial eta squared in Table 2), with greater separation in PCA scores among the four couple types. A newly developed Family Cooperation scale also discriminated the couple types fairly well (partial eta squared = .298).

The post hoc Bonferroni procedure further confirmed the overall distinctiveness of each couple type,

Table 2
ANOVA Tests of Group Means of PREPARE Scales among Couple Relationship Types

Couple Relationship Types (N = 849)						
	Vitalized (n = 198)	Harmonious (n = 218)	Traditional (n = 237)	Conflicted (n = 196)	F* (df = 3)	Partial eta squared
Scale	M (SD)	M (SD)	M (SD)	M (SD)		
Personality issues	68.5 (17.2) _a	60.4 (15.6) _b	35.2 (15.2) _c	21.5 (15.7) _d	384.6	.577
Conflict resolution	73.1 (13.9) _a	60.3 (15.2) _b	41.9 (16.8) _c	26.1 (16.5) _d	344.8	.555
Communication	71.9 (15.4) _a	57.6 (15.0) _b	45.7 (15.1) _c	26.3 (16.0) _d	312.7	.526
Family and friends	72.8 (13.8) _a	62.8 (14.5) _b	60.0 (15.5) _b	35.6 (16.4) _c	216.2	.434
Sexual relationship	83.6 (15.7) _a	61.6 (19.1) _b	80.8 (14.3) _a	52.4 (20.4) _c	155.1	.355
Financial management	60.5 (20.0) _a	31.1 (16.7) _b	38.5 (19.0) _c	23.3 (18.4) _d	147.9	.344
Family cooperation	66.5 (16.0) _a	55.5 (16.5) _b	54.2 (17.2) _b	34.6 (18.2) _c	119.6	.298
Children and parenting	43.1 (20.0) _a	17.0 (14.0) _b	35.0 (18.0) _c	18.7 (15.7) _b	114.7	.289
Leisure activities	61.0 (14.3) _a	49.5 (13.4) _b	46.8 (15.1) _b	33.9 (16.5) _c	110.2	.281
Realistic expectations	11.5 (12.8) _a	19.7 (13.7) _b	18.2 (14.4) _b	25.8 (16.6) _c	32.7	.104
Equalitarian roles	57.7 (15.5) _a	51.9 (17.1) _b	57.5 (14.8) _a	48.1 (18.3) _b	16.5	.055
Note. Bonferroni procedure: Means with different subscripts differ significantly, $p \leq .001$.						
* F tests all significant at $p \leq .0001$.						

as 58 out of 66 pair-wise mean comparisons were significant at the $p \leq .001$ level (see note in Table 2). Equalitarian Roles was the least differentiated scale with two non-significant pair-wise comparisons (Harmonious vs. Conflicted; Vitalized vs. Traditional).

DISCUSSION

Cultural and Research Applicability of Japanese PREPARE

The results of this study have demonstrated the cultural and research applicability of the Japanese version of PREPARE with Japanese premarital couples. The second back-translation of Japanese items into English again validated the face validity of Japanese items with its accuracy in translation, as well as appropriateness of the terminology used to describe premarital relationship issues. A necessary adjustment was made to one item with less precise translation.

The internal consistency of the Japanese PREPARE also attests to the research utility of the inventory. Japanese PREPARE scales demonstrated the adequate average alpha coefficient of .70, with the newly developed Family Cooperation scale yielding acceptable coefficient of .69. A decision to drop nine items from the original 125 items was made to maximize the scales' internal reliability. Comparative descriptive analyses (before and after the items were deleted) based on individual and PCA mean scores of the PREPARE scales, as well as couple typology, indicated that the scales' ability to assess their relational content do not appear to have been compromised due to item deletions.

A closer look at one of the deleted items ("My family fully accepts me as an adult") provides a contextual explanation of why this decision may be warranted. Being married is generally regarded as a prerequisite to adulthood in Japan (Hong, 2001). Thus, all the premarital couples in this study are not yet fully endorsed as grown up adults socially. This might have lead to a differing interpretation by the readers than the original item intended. Further examination of each of these nine items is still needed for the continued refinement of the Japanese PREPARE inventory.

Japanese Premarital Couple Types

Four Japanese premarital couple types were identified using cluster analyses. Each type was distinct in its relational qualities and characteristics. Several organizing principles are useful in discussing the profiles of four Japanese couple types. First, overall average PCA PREPARE scores helped rank the levels of functionality among the four couple types, Vitalized, Harmonious, Traditional, and Conflicted, in descending order of their relational qualities. Plotting of the PCA scores across 11 PREPARE scales revealed the overall similarity between the Japanese and U.S. premarital types. A strong effect size (eta squared = .554) also supported the effectiveness of four couple types in differentiating the couple relationship qualities based on their mean PCA scores.

Second, the ecological perspective can provide the conceptual maps for plotting where the strengths and challenges of each Japanese couple type can be found. In comparing four couple types, greater separations were observed among Personality Issues, Conflict Resolution, Communication, and Family Friends. These scales represented all three ecological factors (Individual, Interpersonal, and Contextual), and are thus indicative of multi-systemic effects on premarital relationships among Japanese couples.

In separate comparisons, vitalized couples showed more strength in all three ecological areas: Individual traits, interpersonal, and contextual factors. Conflicted couples, on the other hand, struggled to find the shared views and resources to cope with these ecological relational domains. Harmonious couples showed fairly functional overall relationship characteristics, especially around the immediate intra- and interpersonal domains (Personality Issues, Communication, and Conflict Resolution). Traditional couples showed more strengths in the contextual and external areas of their relationships (Family and Friends, Family Cooperation), while their dyadic areas were rather weak in comparison.

Clinical Implications

The results of this study support the importance of premarital education and preventive interventions among Japanese couples. There were clearly varying degrees of premarital relationship qualities among the

participants as measured by PREPARE relationship scales and couple types. The Japanese PREPARE may be a useful premarital assessment tool for providing more effective preventive measures in premarital education.

Based on these results, clinicians working with Japanese premarital couples are encouraged to incorporate time as a significant premarital factor in their interventions. A new Family Cooperation scale provided additional time dimension with its foci on future relationship dynamics with parents and in-laws. The harmonious couples displayed more immediate internal harmony, while showing fewer concerns with future-oriented issues, such as future financial planning or parenting. A similar trend was also observed among the U.S. harmonious type (Fowers & Olson, 1992). However, future relationships with parents and in-laws appear to be quite important for the Japanese harmonious couples as indicated by their moderately high Family Cooperation scores.

Thus, premarital assessment and preventive interventions with Japanese couples must include the component of dealing with *on-going* future relationship issues with parents and in-laws. The couples in this study displayed their keen interests and awareness of such issues as living with and caring for aging parents in the future (Family Cooperation). The effectiveness of many premarital preventive programs in the U.S. has been well documented, but their focus has been typically narrow in the areas of premarital communication and conflict resolution (see Markman et al., 1988; 1993 for the PREP program). The U.S. PREPARE program is also found to be effective in improving overall couple relational qualities (see Fournier, Druckman, Robinson, & Olson, 1979; and Knutson & Olson, 2001 for the PREPARE program), and is one of few programs that pays special attention to family-of-origin issues. Clinicians working with Japanese premarital couples must incorporate not only past family-of-origin issues, but also the on-going and reciprocal nature of the couple's relationship with parents and in-laws.

Japanese PREPARE premarital types can be also useful in addressing these issues. The couple types can help clinicians conceptualize premarital relationship qualities, and implement the clinical strategies according to the characteristics of each couple type. Then, premarital couple types can be used for implementing a concrete treatment goal. Moving the couple to the next functional level (i.e., Conflicted to Traditional) might be a reasonable and attainable goal of intervention (Knutson & Olson, 2001). Using the ecological perspective, the intervention could also be catered to the available strengths of a specific couple type. For instance, traditional couples tend to have more strength in their contextual area (family network support). Perhaps, traditional couples can utilize their resources with their relatives and in-laws to cultivate their interpersonal relationship at the dyadic level.

Similarly, harmonious couples generally have strengths in interpersonal relationship areas, but have tendency to overlook future issues such as children and parenting and financial management issues. Given the high divorce rate among Japanese empty nesters (Iwai, 2001), it is important for clinicians to help harmonious couples apply their interpersonal strengths in parenting areas so that they can jointly discuss their roles in child rearing.

Limitations and Future Research Directions

One limitation of the current study is its overall reliance on the "experts" in determining cultural applicability of PREPARE constructs and scales. Although the process successfully yielded a culturally sensitive collaboration between U.S. and Japanese family scholars, a more ethnographic and constructionist approach (Boss, Dahl, & Kaplan, 1996; Newfield et al., 1996) is needed in the future studies. Conducting focus groups with Japanese engaged couples (both who took PREPARE and who have not) might yield additional premarital factors that can be incorporated into the Japanese PREPARE inventory.

It is extremely important for the cultural validation process of PREPARE with Japanese couples to be continued. For instance, the Japanese PREPARE and typology should be used repeatedly with the same participants during the premarital process to evaluate the effectiveness of the preparation education program. At the same time, the Japanese PREPARE must be evaluated with additional groups within the Japanese culture (within-diversity), given that the participants of this study were rather monolithic in terms of their demographic backgrounds (i.e., relatively well-educated, city-dwelling couples).

Use of "experts" in the back-translation process may also impose another limitation due to their very

knowledge of the PREPARE inventory. Although their familiarity with the inventory might have served well in the content analyses, it might also have biased the reading of Japanese items because of their prior knowledge. Back-translation should be performed by additional individuals who have no prior knowledge of the inventory (Herrera et al., 1993).

Another limitation of this study is its cross-sectional research design. The premarital participants in this study have not been followed up during their marriages, therefore, the predictive validity of PREPARE with Japanese marital outcomes (i.e., marital qualities and stability) cannot be obtained. A longitudinal study should be conducted to validate the predictive ability of the Japanese version of PREPARE, using both relational scales and premarital couple types.

In a related matter, examining marital arrangements among Japanese couples might reveal additional predictive nature of Japanese premarital couple types. Would couples with an arranged marriage have a more realistic view of their marriage? Would the traditional type account for more couples in an arranged marriage? Would premarital couples with love marriages have a higher likelihood of divorce than ones with arranged marriages? A longitudinal study should enable researchers to examine the potential associations among three premarital factors (premarital types, qualities, and marital arrangement status), and their future marital qualities and stability.

In conclusion, we believe the process we took in adapting PREPARE with Japanese couples can be applied to future research and clinical inquiries at various levels; from cross-cultural comparative analyses of two or more groups (i.e., culturally sensitive application of a U.S. inventory with additional cultural groups) to a single clinical case study (culturally sensitive interpretation of an inventory with a specific couple). Sensible adaptation process of a premarital inventory and its clinical applications require researchers and clinicians to make conscientious efforts to contextualize research and clinical data, so that their findings have culturally meaningful connecting points for their research participants and clients.

This study has provided a starting point for a better conceptual and clinical understanding of the premarital relationships in Japan. Developing a culturally sensitive and applicable premarital inventory is not an easy task. However, if family scholars and research participants can maintain collaborative relationships across cultural lines, further advancement of the premarital field can be made by using this study as a springboard for a thorough dialogue between Japanese and U.S. family scholars, and Japanese premarital couples (Dilworth-Anderson, Burton, & Johnson, 1993; Turner, 2000).

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NOTE

¹ The Japanese version was based on Version 1987 of PREPARE (because PREPARE Version 2000 was not available at the time of translation), and all the data for the current study are based on the 1987 version.

APPENDIX

Changes made to PREPARE for Japanese version

Family Cooperation Scale (10 items: Japanese PREPARE version only)

- Living with either my parents or future parents-in-law will put a strain on our marriage life.
- My parents have a really good impression of my partner.
- We spend just right amount of time with my parents and parents-in-law.
- I will gladly live with either my own parents or my partner's parents.
- I am concerned that we might get too involved with both sides of families.
- I am well aware of my partner's family background, and have a good impression of them.
- We would like to invite our parents to live with us when they get older.
- My parents and parents-in-law will be able to provide us sufficient financial support during our marriage.
- I already sense that my future-in-laws and I will have some conflicts in the future.
- We have already discussed about financially supporting our parents when they get older.

Deleted PREPARE Items (Numbers indicate the item number)

- 82. After marriage, it will be easier to change things about my partner I don't like.
- 30. My partner should smoke, drink, or use drugs less often.
- 84. I do not have much fun unless I am with my partner.
- 49. I think having children will dramatically change the way we live.
- 27. My family fully accepts me as an adult.
- 108. I have concerns when my partner spends time with friends or co-workers of the opposite sex.
- 43. In our marriage, the husband should be willing to adjust as the wife.
- 97. Both of us jointly agree on all important issues.
- 125. It was hard to identify the leader (s) in our family.