

Screening for Marital Distress

Epidemiologic and Clinical Perspectives

Douglas K. Snyder

Texas A&M University, USA

Mark A. Whisman

University of Colorado, USA

Steven R. H. Beach

University of Georgia, USA

Findings from a representative U.S. sample of community couples suggest that marital discord is taxonic (comprising a discrete underlying entity), with an estimated base rate prevalence of .31. A 10-item screening measure developed to detect marital discord demonstrates good temporal stability and criterion-related validity in distinguishing distressed from nondistressed couples. Adaptations of this 10-item measure into diverse languages support cross-cultural applications in epidemiologic studies of the prevalence of relationship discord and its comorbidity with emotional, behavioral, and physical health problems of adult partners and their offspring. In aggregate, results suggest that discordant couples differ qualitatively, and not just quantitatively, from nondiscordant couples and that user-friendly methods, suitable for a range of research and clinical applications, can be used to examine the prevalence and diverse impact of marital discord.

The Importance of Relationship Well-Being

Across diverse cultures, individuals rate having a satisfying marriage or relationship as one of their most important goals in life (Levinger & Huston, 1990). Indeed, marital happiness exceeds satisfaction in other domains (e.g., health, work, or children) as the strongest single predictor of overall life satisfaction. When intimate relationships become distressed, the negative effects on partners' emotional and physical well-being can be far-reaching. In a U.S. national survey, the most frequently cited causes of acute emotional distress were relationship problems including divorce, separation, and other marital strains (Swindle et al, 2000). Other recent studies indicate that maritally discordant individuals are overrepresented among individuals seeking mental health services, regardless of whether they report marital distress as their primary complaint (Lin et al, 1996).

Research indicates that couple distress covaries with individual emotional and behavioral disorders above and beyond general distress in other close relationships (Whisman, Sheldon, & Goering, 2000). In comparison to happily married persons, maritally distressed partners are 3 times more likely to have a mood disorder, 2.5 times more likely to have an anxiety disorder, 2 times more likely to have a substance use disorder, and 5.5 times more likely to report problems of domestic violence. Moreover, couple distress – particularly negative communication – has direct adverse effects on cardiovascular, endocrine, immune, neurosensory, and other physiological systems that, in turn, contribute to physical health problems (Kiecolt-Glaser & Newton, 2001). Nor are the effects of couple distress confined to the adult partners; both clinical and epidemiological research indicates that marital distress, conflict, and disruption are associated with a wide range of deleterious effects on children, including depression, withdrawal, poor social competence, health problems, poor academic performance, and a variety of conduct-related difficulties (Gottman, 1999).

In the United States, the most salient indicator of couple distress remains a divorce rate of approximately 50% among married couples (Kreider & Fields, 2002), with about half of these occurring within the first 7 years of marriage. However, divorce rates constitute a poor proxy for marital distress. Because not all distressed couples pursue divorce, divorce rates almost certainly underestimate lifetime prevalence rates for serious marital distress. The research literature suggests that most marriages experience periods of significant turmoil that place them at risk for dissolution or symptom development (e.g., depression or anxiety) in one or both partners at some point in their lives. Moreover, both rates and moderators of divorce vary considerably across cultures (cf., 45% of English, 39% of German, and 15% of Spanish marriages) as a function of such factors as cohabitation outside of marriage and both social and economic constraints on divorce (Sardon, 2006).

Evaluating the prevalence of marital distress (or distress in similar committed relationships) as well as its covariation with emotional, behavioral, and physical health in adult partners and their offspring requires a reliable indicator of relationship well-being with a cutoff for identifying distress relatively independent of specific sample characteristics. The remainder of this paper summarizes findings from two investigations that: (a) first examined the taxonic structure of marital distress and estimated its base-rate in a representative U.S. community sample, and (b) then derived a reliable, user-friendly screening measure with high criterion validity for distinguishing distressed from nondistressed couples. Psychometric studies of adaptations

of this measure into various languages suggest its suitability for epidemiologic research and clinical applications across diverse cultures.

Distressed Couples Differ Qualitatively from Nondistressed Couples

In assessing marital (or relationship) quality, researchers have emphasized continuous measures, often labeled as measures of “satisfaction,” “adjustment,” “discord,” or “distress” (for a review, see Snyder, Heyman, & Haynes, 2005). Because dichotomous classifications are often used in marital research, and because researchers and clinicians often refer to discordant couples, a fundamental question arises as to whether discordant couples differ from nondiscordant couples not only quantitatively, but qualitatively as well. Stated differently, do discordant and nondiscordant couples differ in kind as well as in degree? A recent set of statistical methods labeled the *taxometric method* makes it possible to evaluate whether dimensional scales reflect an underlying discrete entity or *taxon* (Waller & Meehl, 1998) by seeking patterns that are diagnostic of either latent categories (i.e., taxa) or dimensions.

What does it matter if marital discord is taxonic rather than continuously distributed? First, evidence of a marital discord taxon would help provide cut-scores for distinguishing discordant couples from nondiscordant couples. Without such information, cut-scores are at least in part arbitrary, depending on one’s choice of specific “functional” and “dysfunctional” comparison groups. Furthermore, evidence that marital discord is taxonic may have important implications for the classification, assessment, and conceptualization of marital discord. For example, identifying a nonarbitrary latent category whose members differ qualitatively from nonmembers has important implications for etiology, as theories need to account for why this discontinuity exists. For example, a taxon may arise due to categorical causal factors, threshold effects for continuous causal factors, nonlinear or synergistic interactions of two or more causal factors, or developmental processes in which people gradually separate into discrete classes from initially non-taxonic phenomena (e.g., Beauchaine, 2003; Fincham, Stanley, & Beach, 2007; Meehl, 1992; Ruscio, Haslam, & Ruscio, 2006). Additionally, the existence of a marital discord taxon may have implications for relationship education as well as the treatment of relationship and individual functioning. For example, the presence of a marital discord taxon could inform decision-making regarding the need for services, intensity of services, and outcome of such services (Beauchaine & Beach, 2006).

We evaluated the nature of marital discord using taxometric procedures in a representative community sample of 1,020 couples recruited from across the United States (Whisman, Beach, & Snyder, 2008). Relationship functioning was assessed using the Marital Satisfaction Inventory – Revised (MSI-R; Snyder, 1997), a multi-scale instrument identifying the nature and intensity of relationship distress in distinct areas of interaction. Our operational definition of marital discord was composed of broadband measures of relationship affect, communication difficulties, and dissatisfaction with the quality of sexual and nonphysical intimacy using 5 scales from the MSI-R: Global Distress (GDS), Time Together (TTO), Sexual Dissatisfaction (SEX), Affective Communication (AFC), and Problem-Solving Communication (PSC). To create couple-level indicators of marital discord, indicators for husbands were multiplied by the corresponding indicators for wives. Because AFC and PSC were highly correlated in the MSI-R standardization sample, the AFC and PSC product terms were summed and divided by two to create a single product indicator assessing couples’ overall communication.

To test for the presence of a latent categorical structure in the MSI-R indicators, we used MAXCOV (Maximum Covariance), MAMBAC (Means Above Minus Below a Cut), and L-MODE (Latent Mode Factor Analysis) (Ruscio, Haslam, & Ruscio, 2006; Waller & Meehl, 1998) to analyze data from the MSI-R standardization sample. For purposes here, we report findings only from the MAXCOV analyses; results from these analyses were generally replicated across the other two taxometric procedures. In MAXCOV, two indicators of a construct are used to estimate the covariance between indicators at various levels of a third indicator. If the assumption of taxonicity is correct, the covariation between the first two indicators will tend toward zero for persons very high and very low in the distribution of total scores, but will increase as the third indicator approaches the point at which there is an even number of taxon and non-taxon members. By repeating the analysis for all possible sets of item indicators, and averaging the standardized results, it is possible to generate an average curve that represents the covariance among items at increasing levels of symptomatology. A taxonic interpretation of the data is supported if the average curve resulting from the MAXCOV analysis displays a single prominent peak, where this point of greatest covariation in the sample is used to estimate the base rate using the General Covariance Mixture Theorem (Meehl & Golden, 1982).

To examine the taxonicity of the marital discord indicators using MAXCOV, we calculated the covariance of the 6 possible pairwise combinations of the 4 indicator variables. The covariances of the pairwise combinations were averaged and plotted as a function of the total score. Using this averaged curve, taxon membership was estimated to characterize 31% of the sample.

Evidence for the temporal stability of this marital discord taxon was derived from a 6-week test-retest sample of 105 community couples yielding a kappa for taxon classification of .75. In comparison to the taxon base rate of .31 in the MSI-R standardization sample, the base rate of the taxon in three independent samples of couples in treatment were .92, .94, and .86 (n 's of couples in each sample being 50, 50, and 323, respectively), indicating strong discriminative validity and yielding large effect sizes for community versus clinical samples' taxon base rates. We also examined the association between taxon membership and therapists' ratings of couples from a national sample of couples in treatment ($n = 323$), and found that taxon membership correlated significantly ($r = .50$) with a composite therapist rating of relationship problems across multiple areas. Moreover, taxon membership predicted therapists' ratings of couple distress above and beyond partners' self-reports of global distress (GDS) on the MSI-R.

Couple Distress Can Be Efficiently and Reliably Measured

The initial study indicating the taxonic structure of marital discord used spouses' responses to 77 items comprising 5 scales from the MSI-R. In some clinical and research contexts, administration of this many items may not be feasible. Hence, our second study (Whisman, Snyder, & Beach, in press) developed and evaluated a brief 10-item screening measure for detecting the marital or relationship discord taxon for clinical and research purposes. Although there are some existing measures for defining relationship discord categorically (e.g., Heyman et al, 2001), this new measure is the only one specifically designed to diagnose marital or relationship discord as operationalized using advanced taxometric procedures.

To identify the best set of items for measuring the construct assessed by each of the taxon indicators, we first computed item-total correlations for each of the five MSI-R scales

used previously to define the marital discord taxon: Global Distress, Time Together, Sexual Dissatisfaction, Affective Communication, and Problem-Solving Communication. We then selected the two items from each of the five scales that demonstrated the highest item-total correlations (see Appendix). Half of the items are coded as discordant if answered true and half are coded as discordant if answered false, effectively countering “all true” or “all false” response sets. The 10-item screen is scored by counting the number of coded (i.e., discordant) responses; scores range from 0 to 10 with higher scores indicating greater relationship discord. The mean score was 3.20, with a coefficient alpha of .81 and mean inter-item correlation of .31.

To establish cut-scores and examine the diagnostic accuracy of the screen, we compared the accuracy of this 10-item screening measure against classification of couples as discordant or nondiscordant in the original taxonic analyses using standardized Wife \times Husband product terms for full-length MSI-R scales. To identify a cut-score for the screen, we conducted receiver operating characteristic (ROC) analyses (Swets, Dawes, & Monahan, 2000) of the sum of the 10 items, replicated across gender and across split-half samples. For general purposes in which maximizing sensitivity and specificity are equally important (i.e., maximizing correct classification and minimizing misclassification), the optimal cut-score (defined as the point of furthest displacement of the ROC curve) for both wives and husbands was a score of 4.

Diagnostic performance was then evaluated in terms of sensitivity (proportion of individuals who are members of the taxon and who are identified by the screening measure as taxon members), specificity (proportion of individuals who are members of the complement (nontaxon) group and who are identified by the measure as complement members), positive predictive value (proportion of individuals classified by the measure as members of the taxon who truly are taxon members), negative predictive value (proportion of individuals classified by the measure as members of the complement (nontaxon) group who truly are complement members), correct classification rate (overall hit rate), and kappa (level of agreement beyond that accounted for by chance alone). These results, which are presented in Table 1 for men and women separately, indicate that the 10-item screen demonstrated excellent diagnostic performance in classifying the sample into maritally distressed and nondistressed groups.

Whereas the cut-score of ≥ 4 for identifying the taxon was selected because it maximized correct classification and minimized misclassification, there may be occasions when different criteria are important, requiring the use of different cut-scores. Therefore, we computed diagnostic performance statistics for cut-scores one point lower ≥ 3 and one point higher ≥ 5 on the 10-item screen; diagnostic performance statistics for these alternate cut-scores are also presented in Table 1.

Although these investigations were based on a representative U.S. community sample of English-speaking couples, separate research with the MSI-R suggests that adaptation of the 10-item measure into alternative languages may prove equally reliable and valid. Because cross-cultural comparisons benefit from a common metric for evaluating findings across culturally as well as linguistically diverse groups, measures adapted for such applications need to undergo rigorous evaluation not only of their linguistic equivalence (i.e., literal translation of content) but also of their psychological and scalar equivalence as well (Geisinger, 1994). The MSI-R distinguishes itself from alternative measures of relationship functioning in that multiple studies have already garnered evidence supporting its psychometric characteristics in a variety of western as well as nonwestern cultures (Snyder et al, 2004).

Implications for Epidemiologic and Clinical Applications

These results provide further evidence that differences in marital discord are differences in kind rather than merely differences in degree. However, finding a discontinuity, as indicated by a taxonic result, is not a substitute for careful development of the “syndrome” of marital discord. The current results support efforts to better understand how the syndrome of marital discord may emerge and how it may be maintained, as well as how relationship education and similar interventions may prevent its onset or reduce either the depth or duration of marital distress in response to diverse individual and relationship stressors.

Future research is needed to identify factors associated with the onset and course of a taxonic classification of marital discord. For example, severe life stressors could precipitate large-scale changes that might qualify as categorical change (Story & Bradbury, 2004). In addition, it may be that some risk factors are themselves taxonic, which in turn give rise to a categorical marital discord taxon. For example, there is evidence that some psychiatric disorders (for a review, see Haslam, 2003) and some emotions (Haslam & Bornstein, 1996) are taxonic, and these in turn could contribute to the development of a categorical marital discord taxon. Alternatively, it may be that threshold effects for continuous causal factors, once crossed, give rise to a categorical marital discord taxon. For example, Gottman and colleagues (Gottman, 1994; Gottman, Swanson, & Murray, 1999) have used a mathematical approach to model set-points and threshold effects, and have argued for categorical differences in couples based on these criteria. Future research is needed to see if the marital discord taxon is a consequence of threshold effects on continuous risk factors such as marital interaction.

Research is also needed on the implications of a marital discord taxon for relationship education and intervention, to determine whether taxon membership informs decision-making regarding the need for services, intensity of services, and outcome of such services (Beauchaine & Beach, 2006). For example, the marital discord taxon may be useful in triaging couples to types of treatment if, for example, it were found that couples that are not members of the taxon could benefit from shorter-term primary or secondary prevention efforts, whereas those who are members of the taxon require more intensive interventions. The presence of elevated marital distress has already been associated with poorer short- and long-term outcome to individually focused treatments for several mental health problems (e.g., Fals-Stewart, O’Farrell, & Hooley, 2001; Hooley & Teasdale, 1989).

The 10-item screening measure of relationship distress derived from these investigations is the only one specifically designed to diagnose marital or relationship discord as operationalized using advanced taxometric procedures. Administration and scoring of the screen are efficient and straightforward. For general purposes, in which sensitivity and specificity are equally important and the purpose of the screen is to maximize correct classification and minimize misclassification, a cut-score of ≥ 4 on the sum of the 10 items provides the best diagnostic performance whereby persons scoring < 4 are classified as belonging to the complement (i.e., nondiscordant) group, whereas persons scoring ≥ 4 are classified as belonging to the taxon (i.e., discordant) group. In clinical applications in which the goal is to ensure that persons at risk for relationship discord are identified and referred for additional assessment or intervention, a cut-score of ≥ 3 results in greater sensitivity, although it also yields an increase in the number of false positives. By contrast, in research or clinical contexts where the goal is to ensure that

persons identified by the screening are truly discordant before pursuing more intrusive or costly interventions, a cut-score of ≥ 5 results in greater specificity, although it also yields an increase in the number of false negatives.

Although the current findings suggest that marital discord is taxonic, it is important to note that these results should not be interpreted as a call for an exclusive use of categorical assessment of marital discord. On the contrary, a strong case can be made for dimensional assessment even in the presence of a taxon. That is, there will generally be dimensional variation within taxon and complement classes. For example, dimensional measures can be useful in determining the quality of marital functioning in the nontaxonic (nondiscordant) group – for example, in identifying couples at relatively greater or lower risk for becoming taxonic in response to relationship stressors. The integration of categorical and continuous assessment in couples research has parallels in psychiatry, in which continuous measures (i.e., symptom severity measures) are often used in combination with categorical measures (i.e., psychiatric diagnosis). Thus, there are likely to be situations in which continuous assessments of relationship discord in tandem with categorical assessments aid in planning and evaluating primary or secondary relationship education programs, or when predicting other individual or relationship outcomes to clinical interventions.

Implications for Marriage/Relationship Education Policy

There are several important implications of this work for relationship education policy. First, both the content and timing of relationship education programs within specific target populations at particular times across the marriage/family developmental trajectory may be optimized by epidemiologic studies using a brief, reliable and valid screening measure of marital distress to document both the prevalence of relationship difficulties and their comorbidity with emotional, behavioral, and physical health problems of adult partners and their offspring.

Second, evidence for the taxonicity of marital discord indicates that, above a certain threshold, distressed marriages differ from nondistressed marriages not only in degree but also in kind – suggesting that couples in the taxonic group may require a distinct set of educational programs or intervention protocols to remediate relationship distress or comorbid problems.

Finally, the preponderance of empirical findings regarding the prevalence of marital distress and its comorbidity with individual and family problems have been based on studies of predominantly western (and English-speaking) populations. The systematic adaptation of reliable and valid measures of individual and relationship well-being for epidemiologic and clinical investigations in alternative cultures will be essential to planning and evaluating effective prevention and intervention programs in these societies as well.

Author Notes and Acknowledgments

Correspondence concerning this article should be addressed to Douglas K. Snyder, Department of Psychology, MS 4235, Texas A&M University, College Station, TX, USA, 77843-4235. E-mail: d-snyder@tamu.edu

Contributors to translational research with the MSI-R include: Antonio Cepeda-Benito, Texas A&M University, USA; Kurt Hahlweg, Technische Universität Braunschweig, Germany; Jung-Hye Kwon, University of Korea, South Korea; Charles Negy, University of Central Florida, USA; Abilio Reig-Ferrer, University of Alicante, Spain; Yassir Semmar, Qatar University, Qatar.

Permission to use the MSI-R normative data set for taxometric analyses was provided by Western Psychological Services, Los Angeles, California, USA. Support for preliminary development of the Arabic adaptation of the MSI-R was provided by the Doha International Institute for Family Studies and Development, Doha, Qatar.

References

- Beauchaine, T. (2003). Taxometrics and developmental psychopathology. *Development and Psychopathology*, 15, 501-527.
- Beauchaine, T. & Beach, S. (2006). Taxometrics and relational processes: Relevance and challenges for the next nosology of mental disorders. In S. R. H. Beach, M. Z. Wamboldt, N. J. Kaslow, R. E. Heyman, M. B. First, L. G. Underwood & D. Reiss (Eds.), *Relational processes and DSM-V: Neuroscience, assessment, prevention, and treatment* (pp. 123-137). Washington, DC: American Psychiatric Publishing, Inc.
- Fals-Stewart, W., O'Farrell, T., & Hooley, J. (2001). Relapse among married or cohabiting substance-abusing patients: The role of perceived criticism. *Behavior Therapy*, 32, 787-801.
- Fincham, F., Stanley, S., & Beach, S. (2007). The emergence of transformative processes in marriage: An analysis of emerging trends. *Journal of Marriage and Family*, 69, 275-293.
- Geisinger, K. (1994). Cross-cultural normative assessment: Translation and adaptation issues influencing the normative interpretation of assessment instruments. *Psychological Assessment*, 6, 304-312.
- Gottman, J. (1994). *What predicts divorce? The relationship between marital processes and marital outcomes*. Hillsdale, NJ: Lawrence Erlbaum.
- Gottman, J. (1999). *The marriage clinic: A scientifically based marital therapy*. New York: Norton.
- Gottman, J., Swanson, C., & Murray, J. (1999). The mathematics of marital conflict: Dynamic mathematical nonlinear modeling of newlywed marital interaction. *Journal of Family Psychology*, 13, 3-19.
- Haslam, N. (2003). Categorical versus dimensional models of mental disorder: The taxometric evidence. *Australian and New Zealand Journal of Psychiatry*, 37, 696-704.
- Haslam, N. & Bornstein, B. (1996). Envy and jealousy as discrete emotions: A taxometric analysis. *Motivation and Emotion*, 20, 255-272.
- Heyman, R., Feldbau-Kohn, S., Ehrensaft, M., Langhinrichsen-Rohling, J., & O'Leary, K. (2001). Can questionnaire reports correctly classify relationship distress and partner physical abuse? *Journal of Family Psychology*, 15, 334-346.
- Snyder, D. (1997). *Manual for the Marital Satisfaction Inventory - Revised*. Los Angeles: Western Psychological Services.
- Snyder, D., Cepeda-Benito, A., Abbott, B., Gleaves, D., Negy, C., Hahlweg, K., & Laurenceau, J. (2004). Cross-cultural applications of the Marital Satisfaction Inventory-Revised (MSI-R). In M. E. Maruish (Ed.), *Use of psychological testing for treatment planning and outcomes assessment* (3rd ed.) (pp. 603-623). Mahwah, NJ: Lawrence Erlbaum.
- Snyder, D., Heyman, R., & Haynes, S. (2005). Evidence-based approaches to assessing couple distress. *Psychological Assessment*, 17, 288-307.
- Story, L. & Bradbury, T. (2004). Understanding marriage and stress: Essential questions and challenges. *Clinical Psychology Review*, 23, 1139-1162.
- Swets, J., Dawes, R., & Monahan, J. (2000). Psychological science can improve diagnostic decisions. *Psychological Science in the Public Interest*, 1, 1-26.
- Swindle, R., Heller, K., Pescosolido, B., & Kikuzawa, S. (2000). Responses to nervous breakdowns in America over a 40-year period: Mental health policy implications. *American Psychologist*, 55, 740-749.
- Waller, N. & Meehl, P. (1998). *Multivariate taxometric procedures: Distinguishing types from continua*. Thousand Oaks, CA: Sage Publications.
- Whisman, M., Beach, S., & Snyder, D. (2008). Is marital discord taxonomic and can taxonomic status be assessed reliably? *Journal of Consulting and Clinical Psychology*, 76, 745-755.
- Whisman, M., Sheldon, C., & Goering, P. (2000). Psychiatric disorders and dissatisfaction with social relationships: Does type of relationship matter? *Journal of Abnormal Psychology*, 109, 803-808.
- Whisman, M., Snyder, D., & Beach, S. (in press). Screening for marital and relationship discord. *Journal of Family Psychology*.

Table 1
Diagnostic Performance of the 10-Item 2-Stage Screening Protocol in
Detecting Marital Discord

Index of Diagnostic Performance	Cut-score					
	Women			Men		
	3	4	5	3	4	5
Sensitivity	.97	.88	.76	.95	.87	.72
Specificity	.73	.84	.92	.70	.85	.93
Positive predictive value	.62	.72	.82	.59	.73	.83
Negative predictive value	.98	.94	.90	.97	.93	.88
Correct classification	.81	.86	.87	.78	.86	.87
Kappa	.61	.68	.70	.55	.69	.68
Base rate	.49	.38	.29	.51	.37	.27

Appendix: Marital Taxon Self-Report Measure

1. I get pretty discouraged about our relationship sometimes.
2. My partner often fails to understand my point of view on things.
3. Whenever I'm feeling sad, my partner makes me feel loved and happy again.
4. My partner and I spend a good deal of time together in different kinds of play and recreation.
5. My partner has too little regard sometimes for my sexual satisfaction.
6. There are some serious difficulties in our relationship.
7. Minor disagreements with my partner often end up in big arguments.
8. Just when I need it the most, my partner makes me feel important.
9. Our daily life is full of interesting things to do together.
10. Our sexual relationship is entirely satisfactory.

Note

Items #1, 2, 5, 6, and 7 are scored if answered "true." Items #3, 4, 8, 9, and 10 are scored if answered "false." The original MSI-R item numbers for these 10 items, respectively, are as follows: #58, #124, #43, #39, #81, #95, #54, #80, #76, and #127.

Selected items from the MSI-R copyright © 1997 by Western Psychological Services. Reprinted for the sole purpose of scholarly reference by permission of WPS, 12031 Wilshire Boulevard, Los Angeles, California, 90025, U.S.A., www.wpspublish.com. Not to be reprinted in whole or in part for any additional purpose without the expressed, written permission of the publisher (rights@wpspublish.com). All rights reserved.