



# The Mindfulness in Couple Relationships Scale: Development and Validation

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## Abstract

**Objective** The factor structure, reliability, and concurrent, convergent, and incremental validity were tested for a new theoretically informed measure of couple relationship mindfulness, the Mindfulness in Couple Relationships Scale (MCRS).

**Methods** The analytic (training) sample included 408 (independent) adult men and women, and the cross-validation (test) sample included 368 adults who responded to 52 survey items as part of a measurement development study conducted within the context of a relationship education evaluation. Both samples were racially, economically, and relationally diverse.

**Results** Confirmatory factor analyses of individual measurement models in the training sample informed the refinement of a 31-item, eight-factor measure. The full measurement model had good fit and reliability. Cross-validation in the test sample provided further evidence of validity and reliability. Support for concurrent validity was evidenced by significant associations between the MCRS and couple quality, relationship positivity, relationship negativity, and sexual satisfaction. Support for convergent validity was evidenced by significant associations between the MCRS and the abbreviated Five Facet Mindfulness Questionnaire (FFMQ). Finally, regression models indicated support for incremental validity over and above the influence of the abbreviated FFMQ (i.e., a measure of individual mindfulness) in predicting relationship well-being.

**Conclusions** This measure provides an efficient and multi-dimensional assessment of mindfulness in the context of couple relationships and may prove useful, whether using the total scale or subscales of the measure, in future research and in practice.

**Keywords** Measure development · Relational mindfulness · Couple relationship · Confirmatory factor analysis · Criterion validity · Incremental validity

Along with growing openness to the integration of mindfulness into regular living, the past two decades have seen a surge in the research on mindfulness (Baminiwatta & Solangaarachchi, 2021). As the research evidence focused on the positive benefits of mindfulness begins to accumulate there has been a greater focus on mindfulness in context (i.e., mindful parenting, mindful teaching, etc.) and the development of new measures that assess the level of mindfulness in specific relational contexts (e.g., Interpersonal Mindfulness in Parenting Scale; Duncan, 2007; Mindfulness in Teaching Scale; Frank et al., 2016). Within this realm of relational mindfulness is emerging attention on couple

relationship mindfulness, or the state of being attuned to the present moment while in relation to one's intimate partner (e.g., Stanley, 2012). Although this research is expanding, a limitation is the common use of general measures of mindfulness, assuming that individual mindfulness indicates mindfulness in the couple context. Also limiting is that the few measures of couple mindfulness assess only awareness in couple relationships, rather than other dimensions or practices.

Mindfulness is often described as an inner state of mind (Kabat-Zinn, 2009); however, several scholars suggest mindfulness allows for meaning in relation to social contexts and that mindfulness can manifest differently depending on the interpersonal experience (Gambrel & Keeling, 2010; Stanley, 2012). Nhat Hanh (1992) originally described it as “interbeing” or the interconnectedness of all beings. Nhat Hahn wrote that we do not exist independently and that we are a continuation or extension of our family and

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relationships. Relationship awareness has been defined as thinking about one self's and one's partner's interactions, patterns, and similarities (Acitelli, 1992); however, this definition seems to be focused solely on consciousness and does not consider other aspects of mindfulness.

According to several scholars and world-renowned practitioners, awareness or noticing is only one dimension or facet of mindfulness practices (e.g., Baer et al., 2006; Kabat-Zinn, 2009). More specifically, Kabat-Zinn articulated seven core attitudes of mindful individuals, in addition to noticing: (1) non-judging: being an impartial observer to each experience; (2) patience: allowing each experience to emerge in its own time; (3) a beginner's mind: inviting each experience as if it is for the first time; (4) trust: believing in your intuition and your own ability; (5) non-striving: being or "non-doing"; (6) acceptance: seeing things as they actually are; and (7) letting go: detaching from feelings and thoughts. More explicit assessment of these attitudes in dyadic relationships can aid in research on mindfulness and on couple relationships, as well as provide internal consistency between practices taught in relationship-focused mindfulness-based interventions and measurement of change in couple mindfulness.

Although it is clear mindfulness can be relational in nature, couple relationship mindfulness has not been specifically defined in the literature, as have other types of relational mindfulness. For example, Kabat-Zinn and Kabat-Zinn (1998) defined relational mindfulness in the context of parenting and state that it is characterized by intentionality in relationship interactions with children, which is evidenced by careful listening and attention, as well as providing non-judgmental responses and compassion for self and children. Relational mindfulness has also been described in educational research as an educator's ability to observe thoughts and emotions based on interactions with students without feeling the need to react or judge (Burrows, 2011). Taking the two contextualized definitions described above together and incorporating a multi-dimensional approach to mindful attitudes and practices, a proposed definition of couple relationship mindfulness is intentional awareness and observation of one's own thoughts and emotions in interactions with one's partner approached with patience, openness, nonjudgment, and compassion. More specifically, couples marked by high relational mindfulness would be purposefully attuned to one another in their regular daily living displayed by loving, tolerant, and perceptive attitudes. Considering this definition, a critical evaluation of previous literature on mindfulness and couple relationships is warranted.

The growing literature focused on this topic indicates higher levels of mindfulness (typically measured as trait mindfulness) are associated with greater relationship satisfaction (McGill et al., 2016; Quinn-Nilas, 2020) and more positive relationship behaviors (Barnes et al., 2007; McGill & Adler-Baeder, 2020). Recently, Karremans et al. (2017)

developed a conceptual model depicting how mindfulness may positively influence relationship functioning by (1) increasing pro-relationship motivation and behavior, (2) improving the ability to cope with distress, and (3) enhancing positive relationship cognitions.

The conceptual framework by Karremans et al. is supported by research evidence. For example, previous research indicated mindfulness was positively associated with pro-relationship behaviors such as, forgiveness after a relational offense (Johns et al., 2015), less aggression and negativity in the context of conflict (Barnes et al., 2007), and empathy and understanding (Block-Lerner et al., 2007). Further, one's level of mindfulness can also influence one's ability to cope with distress and prevent an unconscious stress spillover into the relationship (Neff & Karney, 2005). Finally, Carson et al. (2004) found improvements in acceptance of one's partner (i.e., perception of ability to accept difficult characteristics in their partner) were associated with improvements in relationship satisfaction after a couple-focused mindfulness training, suggesting cognitions about one's relationship and partner can influence relationship well-being. The model, however, does not distinguish individual trait mindfulness from mindfulness in the context of the couple relationship. This is likely because most of the extant literature has primarily used measures focused on an individual's level of mindfulness in general when examining couple relationship outcomes. This approach may be incomplete since individual measures of mindfulness assume transference to context-specific relational mindfulness; yet this may not be the case.

Due to the recent recognition of the relational context of mindfulness, researchers have developed corresponding relational measures. The Interpersonal Mindfulness Scale (IMS; Pratscher et al., 2019) was developed by creating theoretically informed items that built a multi-dimensional measure assessing mindfulness in a broad range of relationships. The IMS is composed of four subscales: presence, awareness of self and others, non-judgmental acceptance, and non-reactivity and is shown to provide adequate reliability and evidence of validity. The study indicated that the measure overall as well as subscales exhibited content, convergent, and incremental validity in samples of mostly White, undergraduate, female respondents, as well as scale stability over time. Although the multidimensionality of this measure is especially useful, the IMS assumes mindfulness would be equivalent across relational contexts.

Other relationship mindfulness scales use items focused on a type of relationship. Specifically, the Interpersonal Mindfulness in Parenting Scale (Duncan, 2007) was developed to assess mindfulness related to interpersonal interactions during parenting and is composed of four subscales: present-centered attention, present-centered emotional awareness, non-judgmental acceptance, and non-reactivity. The Mindfulness in Teaching Scale (Frank et al., 2016)

accounts for the interpersonal and intrapersonal aspects of mindfulness while teaching and has been validated in diverse teaching settings.

Three measures also were developed with items specific to the couple relationship as opposed to relationships in general since couple relationships are marked by greater intimacy and closer ties. The Sexual Five-Facet Mindfulness Questionnaire (FFMQ-S; Adam et al., 2015) is a 13-item self-report measure adapted from the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006). It contains altered wording and new items for each facet that are relevant for sexual functioning. In a sample of 251 French-speaking, mostly heterosexual females, the FFMQ-S demonstrated both appropriate structural and criterion validity, and internal consistency was acceptable for most subscales, although the non-judging of inner experience had a low reliability ( $\alpha = 0.51$ ). The Relationship Mindfulness Measure (RMM) was adapted from the Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003) and altered to apply to couple relationships (Kimmes et al., 2017). In a sample of predominantly female and White college students, the authors revised the 5-item version of the MAAS by adding statements about relationships to the existing items and found support for construct and concurrent and predictive criterion validity. Finally, the Attentive Awareness in Relationships Scale (AAIRS; Daks et al., 2021) is a 16-item self-report measure that was created by combining author-developed items and items from the Relationship Mindfulness Measure and Relationship Anxiety and Monitoring measure (Snell, 2002) that were phrased to address the couple relationship context. Using item response theory in a large sample of mostly White individuals in couple relationships, the authors discovered two different factors: attentive awareness and inattention or distraction. The AAIRS demonstrated internal consistency, convergent and discriminant validity, and measurement invariance across different demographic groups. The methodological rigor and design of the measurement development was strong; however, the authors emphasized that this is a measure of couple relationship *awareness*. Thus, it captures the awareness or noticing aspects of mindfulness and is not inclusive of other facets and attitudes related to mindfulness.

These measures move the field forward toward contextualizing mindfulness in the couple relationship; however, there remains a gap in measuring a broader range of theory-based mindfulness practices and attitudes specific to couple relationship processes and using larger, more diverse samples of couples. Of note, the field will benefit from measures that distinguish specific aspects of couple relationship mindfulness. A more complex multi-dimensional measure will allow for research testing whether some aspects of couple mindfulness may foster some specific relationship processes

or outcomes, while other aspects of couple mindfulness may support other relationship processes or outcomes.

In response to the growing field of relational mindfulness, the current study sought to develop a theory-informed, multi-dimensional, context-specific mindfulness measure that assesses the use of mindfulness within couple relationships. The structure of the Mindfulness in Couple Relationships Scale (MCRS) is based on Kabat-Zinn (2009) description of mindful attitudes and practices and is conceptually aligned with Karremans et al.'s (2017) theoretical model of mindfulness and couple relationships. The purpose of this study was to describe the development of the self-report mindfulness measure for couple relationships and test its factor structure in a sample of racially and economically diverse men and women in committed relationships. The concurrent, convergent and incremental validity of the MCRS was tested in an effort to add a potentially useful tool for mindfulness and family science researchers and practitioners.

## Methods

### Participants

The overall sample was racially, economically, and relationally diverse. Approximately 60% identified as White, just over a third (35%) identified as African American/Black, and the remaining 5% identified as other races (e.g., Asian-American, biracial). Thirty percent of respondents reported a combined household income of less than \$25,000 per year, another 42% reported an income between \$25,000 and \$74,999 per year, and the remaining 28% reported an income greater than \$75,000 per year. The majority (69%) were married, and the remaining 31% were in a committed non-marital relationship or engaged to be married. Table 1 provides demographic information for both the training and test samples (methods for creating these are described in “Procedures”). Results of group comparisons between training and test samples revealed no significant between-group differences for income, age, race, relationship type, or parent status.

### Procedures

The sample of adults were recruited for participation in a study focused on the efficacy of couple relationship education programs. After informed consents were collected, individuals completed a baseline survey that assessed a range of demographics, as well as individual, relational, and family functioning indicators. Follow-up surveys were sent at 2 months, 6 months, 1 year, and 2 years post-baseline. To ensure participants completed the survey independently from their partner, each member of a couple was sent an

**Table 1** Demographic information by sample

	Training sample	Test sample	<i>F</i> value or $\chi^2$ value ( <i>p</i> value)
Sample size	408	368	
Gender			.01 (.94)
Male	47%	47%	
Female	53%	53%	
Age			.26 (.28)
Range	18–74	18–78	
<i>M</i> ( <i>SD</i> )	36.58 (11.33)	35.71 (11.34)	
Race (%)			.08 (.77)
White	60%	59%	
Black	36%	35%	
Other minority	4%	6%	
Annual household income (%)			.03 (.67)
< \$25,000	30%	30%	
\$25,000–39,000	17%	17%	
\$40,000–74,999	24%	26%	
> \$75,000	29%	27%	
Relationship type (%)			1.13 (.77)
Married	69%	68%	
Non-married	31%	32%	

ANOVA and chi-square tests conducted to compare groups, with results summarized in the last column

individualized email with a link to the survey to complete. All respondents received a monetary incentive for completing each survey (\$50 for the first 4 surveys and \$100 for the 2-year follow-up).

The work to develop the MCRS was conducted in parallel to the efficacy study, and the scale was added to the 2-year follow-up survey. A total of 832 individuals were presented with the MCRS items on the follow-up survey. Of those, 46 individuals (6%) with missing data on the MCRS scale and 10 individuals (1%) in a same-gender couple relationship were dropped. Gender was used as the sorting variable to create the independent samples for the analyses described below. Thus, 776 individuals (334 couples and 108 individuals in a couple relationship but without a partner in the dataset) were retained for the measurement study. Group difference tests to compare those with complete data on the MCRS and included in the study and those excluded revealed only one significant difference: those included in the study were more likely to report their race as White than those excluded in the study (60% vs. 40%;  $\chi^2 = 4.34$ ;  $p = 0.037$ ).

Based on recommended procedures for within-sample measurement validation (James et al., 2013), the sample ( $n = 776$ ) was randomly split into two groups, rendering the data independent. The “training” sample was used to test the assumptions of the original factor structure and to refine items, and the “test” sample was used to cross-validate the factor structure of the adjusted measure (James

et al., 2013). The training sample was created by randomly selecting half of the women and deleting out their partners if they also completed the survey, leaving only unrelated men in the sample (408 individuals; 53% identified as women; 47% identified as men) to affirm independence of data. The test sample consisted of the men and women not selected for the training sample (368 individuals; 53% identified as women; 47% identified as men) who were also unrelated to one another.

DeVellis’ (2017) guidelines for scale development were consulted in the creation of the Mindfulness in Couple Relationships Scale (MCRS). In line with DeVellis’s first step of scale development, Kabat-Zinn’s (2009) framework of seven guiding attitudes of mindfulness was used as a theory to ensure the measure captures distinctly and collectively the key aspects of mindfulness. Next, items were created or adapted from related measures [FFMQ (Baer et al., 2006); Interpersonal Mindfulness in Parenting Scale (Duncan, 2007); and Mindfulness in Parenting Questionnaire (McCaffrey et al., 2017)], with the concepts and theoretical framework in mind. In the end, eight a priori subscales were created—(1) *non-judging*, (2) *patience*, (3) *beginner’s mind*, (4) *trust of self*, (5) *non-striving*, (6) *acceptance*, (7) *letting go*, and (8) *noticing self and other*. These items were then reviewed by the research team for clarity, reading level, redundancy, and wording. Items were scored on a 7-point Likert scale from 1 = “strongly disagree” to 7 = “strongly agree.” See Table 2 for the complete list of the original 52

**Table 2** Subscales and Items from the Mindfulness in Couples Relationship Scales with Standardized Loadings for Final Items

Item	Estimate (Stand.)
Non-judging subscale (reduced 4-item subscale, $\omega = .82$ )	
CFI = 1.00; TLI = 1.00; RMSEA = .00, $p = .73$	
<b>1. I observe my experiences with my partner without judging</b>	<b>.77</b>
2. I judge my partner's behaviors as good or bad. ( <i>Reverse</i> )	
<b>3. Even when it makes me uncomfortable, I allow my partner to express his/her feelings</b>	<b>.64</b>
<b>4. I listen to my partner's ideas without judgement</b>	<b>.74</b>
<b>5. I observe my partner's emotions without judging</b>	<b>.76</b>
6. I judge my partner's thoughts and behaviors. ( <i>Reverse</i> )	
Patience subscale (reduced 4-item subscale, $\omega = .75$ )	
CFI = .99; TLI = .98; RMSEA = .06, $p = .28$	
<b>7. I take time to thoughtfully be present with my partner</b>	<b>.76</b>
8. I allow each experience with my partner to emerge in its own time	
<b>9. I carefully listen to my partner when they are speaking without regard for time</b>	<b>.66</b>
<b>10. I rush through activities with my partner without really paying attention to them. (<i>Reverse</i>)</b>	<b>.52</b>
<b>11. I tune into my partner when they are talking to me without regard for time</b>	<b>.74</b>
12. I grow impatient with my partner. ( <i>Reverse</i> )	
Beginner's mind subscale (reduced 3-item subscale, $\omega = .80$ )	
CFI = 1.00; TLI = 1.00; RMSEA = .00, $p < .001$	
<b>13. My interactions with my partner are opportunities to learn new things about them</b>	<b>.82</b>
14. Our past experiences influence my current interactions with my partner. ( <i>Reverse</i> )	
15. I anticipate my partners' thoughts and responses based on past experiences. ( <i>Reverse</i> )	
<b>16. Each moment with my partner is an opportunity for new or unique experiences</b>	<b>.77</b>
17. I know how conversations with my partner will go before we have them. ( <i>Reverse</i> )	
<b>18. I keep an open mind when talking to my partner</b>	<b>.66</b>
Trust of self subscale (reduced 3-item subscale, $\omega = .78$ )	
CFI = 1.00; TLI = 1.00; RMSEA = .00, $p < .001$	
19. I believe in my own basic goodness as a partner	
<b>20. I am capable of being present in my relationship</b>	<b>.75</b>
<b>21. I am able to purposefully participate in my relationship</b>	<b>.72</b>
<b>22. I trust my abilities in my relationship</b>	<b>.75</b>
23. I don't trust myself to be a good partner. ( <i>Reverse</i> )	
24. I'm capable of being a good partner	
Non-striving subscale (reduced 3-item subscale, $\omega = .61$ )	
CFI = 1.00; TLI = 1.00; RMSEA = .00, $p < .001$	
<b>25. I can "just be" with my partner</b>	<b>.69</b>
26. When my partner shares problems with me, I don't try to immediately fix it	
<b>27. I do not try to change my partner</b>	<b>.49</b>
28. In difficult situations with my partner, I can pause without immediately reacting	
<b>29. I can spend time with my partner without trying to achieve a goal</b>	<b>.54</b>
30. When my partner shares a problem with me, I try to immediately fix it. ( <i>Reverse</i> )	
Acceptance subscale (reduced 3-item subscale, $\omega = .74$ )	
CFI = 1.00; TLI = 1.00; RMSEA = .00, $p < .001$	
31. I accept that our relationship is the way it is right now	
<b>32. During arguments I accept my partner has a different point of view than I do</b>	<b>.58</b>
33. I accept how our relationship is right now so we can move forward	
34. I push back on my partner's negative moods. ( <i>Reverse</i> )	
<b>35. I accept the positive and negative characteristics of my partner</b>	<b>.76</b>
<b>36. I accept my partner for who my partner is today</b>	<b>.77</b>
Letting go subscale (reduced 4-item subscale, $\omega = .83$ )	
CFI = .99; TLI = .99; RMSEA = .06, $p = .33$	
<b>37. Negative emotions related to my partner take over my everyday thoughts. (<i>Reverse</i>)</b>	<b>.70</b>

**Table 2** (continued)

Item	Estimate (Stand.)
38. After conflict I recognize when it is time to let go of negative feelings	
39. When I have negative thoughts about my partner, I let them go	
<b>40. After conflict with my partner I continue to be overwhelmed by negative feelings. (Reverse)</b>	<b>.76</b>
<b>41. I easily let go of negative emotions towards my partner</b>	<b>.59</b>
<b>42. I get stuck in my negative emotions toward my partner. (Reverse)</b>	<b>.85</b>
Noticing subscale (reduced 7-item subscale, $\omega = .76$ )	
CFI = .97; TLI = .96; RMSEA = .06, $p = .29$	
<b>43. I notice my feelings toward my partner</b>	<b>.74</b>
<b>44. I am aware when I am feeling negative towards my partner</b>	<b>.48</b>
45. I notice when my mind jumps around during discussions with my partner	
<b>46. I am attentive to my partner</b>	<b>.55</b>
47. I find myself listening to my partner with one ear because I am thinking about or doing something else at the same time. (Reverse)	
48. I am often unaware when my partner makes attempts at connecting. (Reverse)	
<b>49. I notice when my partner seems upset</b>	<b>.80</b>
<b>50. I often feel unaware of my partner's thoughts and feelings. (Reverse)</b>	<b>.43</b>
<b>51. I notice when my partner appears distracted</b>	<b>.61</b>
<b>52. I notice when my partner makes efforts in our relationship</b>	<b>.59</b>

Boldfaced items were maintained in the final 31-item measure; (Reverse) indicates the item was reverse coded before analysis

items. The measure was then tested with a small pilot sample ( $n = 32$ ) to assess readability, ease of administration, initial reliability, and discrete validity between subscales. Next, the scale was reviewed by experts in the field of mindfulness and their feedback was incorporated to enhance clarity on some items (e.g., slight word changes). Finally, the scale was administered to the large diverse sample of adults described in the current study.

## Measures

Four measures of relationship functioning, and one measure of individual trait mindfulness were used to assess two types of criterion validity (i.e., concurrent and convergent) as well as incremental validity in the training sample. These data were collected concurrently with the MCRS items on the 2-year follow-up survey.

Three items from the Quality of Marriage Index (QMI; Norton, 1983) were used to assess participants' reports of relationship quality. Response options were on a 7-point Likert scale, ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). An example item is, "We have a good relationship." Because there was minimal missingness on these items (i.e., less than 10% on average), mean scores were created and higher levels indicated higher relationship quality (McDonald's  $\omega = 0.97$ ).

Two items from Fincham and Linfield (1997) Positive and Negative Quality in Marriage Scale were used to assess positive and negative feelings about the relationship. Response options ranged from 1 (*not at all negative/positive*) to 10

(*extremely negative/positive*). The items were used as individual items and were not combined. Higher scores indicated more positive or negative feelings.

Three items from the Sexual Function Index (Rosen et al., 2000) were used to assess sexual satisfaction in the relationship. Response options ranged from 1 (very dissatisfied) to 5 (very satisfied). An example item is "How satisfied have you been in your sexual relationship with your partner?" Because there was minimal missingness on these items (i.e., less than 10% on average), mean scores were created and higher levels indicated more sexual satisfaction (McDonald's  $\omega = 0.94$ ).

Fifteen items from three of the subscales (non-reactivity, acting with awareness, and nonjudgement) of the Five Facets of Mindfulness Questionnaire (Baer et al., 2006) were utilized to assess individual mindfulness. de Bruin et al. (2012) emphasized good reliability for the total measure, as well as the subscales, and asserted utilizing either is appropriate. These subscales were selected for the original efficacy study based on their connection to specific program content. For purposes of our instrument development study, and because the observing and describing subscale items were not used, it is referred to as the abbreviated FFMQ. Example items include: "I watch my feelings without getting lost in them," and "I find myself doing things without paying attention." Response options ranged from 1 (never or very rarely true) to 5 (very often or always true). Because there was minimal missingness on these items, mean scores were created and higher levels indicated higher levels of mindfulness. The abbreviated FFMQ had acceptable reliability (McDonald's  $\omega = 0.76$ ).



## Data Analyses

Because the MCRS was developed to assess eight aspects of couple relationship mindfulness distinguished a priori based on Kabat-Zinn's (2009) conceptual framework (i.e., non-judging, patience, beginner's mind, trust, non-striving, acceptance, and letting go), we used a confirmatory rather than exploratory factor analysis approach. Before analyses were conducted, reverse coding was conducted in order to align several items with the direction of the scaling. Initially, we fit measurement models individually for each subscale. Descriptive statistics, factor loadings, and goodness-of-fit indices were examined, and decisions were made about item refinement before testing the full measurement model and its factor structure (Devellis, 2017).

The training sample ( $n = 408$ ) was used to test the factor structure and content validity of the MCRS, and the test sample ( $n = 368$ ) was used to reproduce the factor structure resulting from the training sample. A combination of common tests for model fit was utilized to examine whether the data fit the model. The comparative fit index (CFI), RMSEA, and a  $\chi^2/df$  ratio were utilized. The CFI estimate indicated good model fit with values of 0.95 or higher, and acceptable model fit for values of 0.90–0.95 (Kenny, 2015). The root mean square error of approximation (RMSEA) utilizes an acceptable cut-off of 0.08 (Kenny, 2015), and values  $< 0.01$  indicated excellent model fit, values ranging from 0.02 to 0.05 indicate good model fit, and values ranging from 0.06 to 0.08 indicated adequate model fit (MacCallum et al., 1996). Finally, a  $\chi^2/df$  ratio of less than 3.9 indicated acceptable model fit (McIver & Carmines, 1981).

Using the training sample, assessments of concurrent, convergent, and incremental validity were conducted next. In the current study, we assessed concurrent validity (i.e., associations between the MCRS, the MCRS subscales, and measures of relationship well-being) and convergent validity (i.e., associations between the MCRS, the MCRS subscales, and a measure of general mindfulness) from data collected at the same time. To assess these types of validity, correlations between the MCRS sum scores, the MCRS subscale scores, and four measures of relationship well-being and one measure of intrapersonal mindfulness were examined. Finally, to assess incremental validity, or whether the MCRS provided predictive power over and beyond the predictive value of a general measure of mindfulness in regard to measures of relationship well-being, a series of block-entered regression models were fit. The four relationship well-being measures (i.e., the dependent variables) were individually regressed on the abbreviated FFMQ and then the MCRS was added in the second block in each model. Final models, standardized beta coefficients, and changes in  $R^2$  were examined to assess for the additional amount of variance in each dependent variable predicted by the MCRS.

## Results

Prior to fitting the full measurement model, individual measurement models were fit for each of the MCRS subscales using the training sample. Although Hair et al. (1998) suggested statistically significant factor loadings greater than 0.30 can be retained, a cut-off of 0.40 was initially used to prune the measure to be more brief and easily usable; however, we utilized the 0.30 limit for the full measurement models run with the training and test samples since the subscales were pruned adequately. Results from the pruned individual measurement models for the MCRS subscales indicated factor loadings ranged from 0.43 to 0.82 and were statistically significant. Goodness-of-fit indices indicated adequate fit of the individual measurement models (CFI  $> 0.90$ ; RMSEA  $< 0.08$ ;  $\chi^2/df$  ratio  $< 3.0$ ). All but one of the subscales (non-reactivity;  $\omega = 0.61$ ) had an individual reliability score considered “acceptable to good,” as specified by McDonald's omega coefficient ( $\omega = 0.74$ – $0.83$ ; Hayes & Coutts, 2020). See Table 1 for factor loadings, omega reliability coefficients, goodness-of-fit indices, and items dropped from individual subscales.

Next, the factor structure of the full MCRS measurement model consisting of the eight first-order factors (31 items total) representing the seven mindful attitudes and the general noticing facet was fit using the training sample. Each of the first-order factors were allowed to covary. The model fit was not satisfactory and inter-item correlations across subscales were assessed. Six statistically significant residual correlations between items were added to the model (e.g., I carefully listen to my partner when they are speaking without regard for time [#9], and I am able to purposefully participate in my relationship [#21]). The revised model with 31 items and 6 significant correlations had acceptable model fit (CFI = 0.92; RMSEA = 0.06,  $p = 0.03$ ;  $\chi^2 = 851.71$ ,  $df = 375$ ,  $\chi^2/df$  ratio = 2.26). The standardized factor loadings ranged between 0.44 and 0.89, and the latent factor covariances were moderate (ranged from 0.33 to 0.73,  $M = 0.52$ ; see Table 3) indicating the subscales were distinct yet related. McDonald's omega coefficient for the MCRS was 0.94 and indicated good reliability. Then, the full measurement model was fit using the test sample to ensure that the factor structure including the 8 latent factors held across samples. Consistent with the initial findings, the standardized factor loadings ranged between 0.34 and 0.86 and the fit indices suggested adequate fit (CFI = 0.89; RMSEA = 0.06,  $p < 0.001$ ;  $\chi^2/df$  ratio = 2.56) and validated the factor structure of the MCRS measure. Item-to-total correlation values (see Table 4) indicated each individual item is correlated substantially with the collection of items (excluding the relevant individual item) suggesting each item was related to the overarching relational mindfulness construct.

**Table 3** Covariances between latent constructs in training and test samples

	Non-judging	Patience	Beginner's mind	Trust of self	Non-striving	Acceptance	Letting go
<b>Training sample</b>							
Patience	.73						
Beginner's mind	.74	.77					
Trust of self	.53	.55	.53				
Non-striving	.60	.67	.65	.49			
Acceptance	.49	.49	.53	.42	.46		
Letting go	.64	.58	.61	.49	.54	.41	
Notice	.41	.46	.46	.36	.41	.36	.34
<b>Test sample</b>							
Patience	.67						
Beginner's mind	.64	.70					
Trust of self	.50	.53	.55				
Non-striving	.57	.57	.60	.50			
Acceptance	.42	.43	.44	.37	.45		
Letting go	.63	.66	.60	.47	.47	.34	
Notice	.41	.47	.43	.39	.44	.35	.33

Concurrent validity was tested by examining correlations between the mean score of the MCRS and measures of relationship quality, relationship positivity and negativity, and sexual satisfaction. Results indicated the MCRS was positively associated with participants' reports of relationship quality ( $r=0.63$ ,  $p<0.001$ ), relationship positivity ( $r=0.52$ ,  $p<0.001$ ), relationship negativity ( $r=-0.53$ ,  $p<0.001$ ), sexual satisfaction ( $r=0.46$ ,  $p<0.001$ ), and individual mindfulness ( $r=0.46$ ,  $p<0.001$ ). Statistically significant positive correlations were also evident between all the MCRS subscales and reports of relationship quality ( $r=0.44$ – $0.61$ ,  $p<0.001$ ;  $M_r=0.50$ ), relationship positivity ( $r=0.36$ – $0.56$ ,  $p<0.001$ ;  $M_r=0.41$ ), relationship negativity ( $r=-0.32$  to  $-0.57$ ,  $p<0.001$ ;  $M_r=-0.41$ ), and sexual satisfaction ( $r=0.30$ – $0.43$ ,  $p<0.001$ ;  $M_r=0.37$ ). Specific correlation coefficients are presented in Table 5. As expected, the MCRS and its subscales were positively associated with relational outcomes that intrapersonal measures of mindfulness have been connected to in previous research (McGill et al., 2020; Parent et al., 2014).

Convergent validity was tested by examining correlations between the mean score of the MCRS and the abbreviated FFMQ (Baer et al., 2006), a measure of individual mindfulness. Results indicated the MCRS was moderately associated with the abbreviated FFMQ in the expected direction ( $r=0.46$ ,  $p<0.001$ ) and that the MCRS subscales had small to moderate positive associations with the abbreviated FFMQ ( $r=0.30$ – $0.48$ ,  $p<0.001$ ;  $M_r=0.36$ ). Specific correlation coefficients are presented in Table 5.

To understand whether the MCRS uniquely predicted variance in each outcome and was not redundant with a measure of general mindfulness (i.e., the abbreviated FFMQ), linear regression models were fit with both the MCRS and the abbreviated FFMQ as predictors. The abbreviated FFMQ was added in the first block, and the MCRS was added in the second block to understand whether and how much additional variance in the outcome was explained by the MCRS, indicating added value. Prior to fitting models, correlations were assessed and both the MCRS and the abbreviated FFMQ were statistically significantly associated with all relational outcomes (see Table 5 for details). In general, evidence for the MCRS' incremental validity is strong as evidenced by the results presented below.

Both the MCRS ( $\beta=0.689$ ,  $p<0.001$ ) and the abbreviated FFMQ ( $\beta=-0.126$ ,  $p=0.006$ ) were statistically significantly associated with relationship quality. The abbreviated FFMQ originally was positively correlated with relationship quality, and the switch in sign suggests issues with multicollinearity. The collinearity diagnostic information corroborated this assumption since the conditional index is larger than 15 (20.35; IBM, n.d.); hence, these results should be interpreted with caution. Originally, the abbreviated FFMQ predicted 0.041 of the variance in relationship quality, and when the MCRS was added, both predicted 0.407 of the variance. This indicated that the MCRS accounted for an additional 37% of variance in relationship quality above and beyond the abbreviated FFMQ ( $\Delta R^2=0.366$ ;  $F(1, 375)=231.49$ ,  $p<0.001$ ).



**Table 4** Item-to-total correlations for the final measure and loadings for the full and original individual measurement models

Item	Full factor analysis	Individual factor analyses								Item-to-total correlation values
	Standardized factor loading	Non-judging	Patience	Beginner's mind	Trust	Non-striving	Acceptance	Letting go	Noticing	
1	.73	.77								.64
2	.74	.74								.75
3	.73	.74								.65
4	.71	.76								.63
5	.79		.76							.72
6	.65		.66							.57
7	.53		.52							.52
8	.71		.74							.65
9	.77			.82						.71
10	.72			.77						.62
11	.75			.66						.71
12	.74				.75					.63
13	.72				.72					.65
14	.75				.75					.68
15	.58					.69				.57
16	.54					.49				.54
17	.60					.54				.57
18	.59						.58			.51
19	.76						.76			.66
20	.77						.77			.68
21	.69							.70		.46
22	.74							.76		.49
23	.60							.59		.54
24	.89							.85		.61
25	.71								.74	.61
26	.44								.48	.32
27	.59								.55	.55
28	.72								.80	.61
29	.44								.43	.49
30	.60								.61	.53
31	.63								.59	.59

Results of the regression model indicated the MCRS was positively associated with relationship positivity ( $\beta = 0.510$ ,  $p < 0.001$ ). The abbreviated FFMQ was not uniquely or significantly associated with relationship positivity ( $\beta = 0.022$ ,  $p = 0.628$ ) while accounting for both measures. There was no evidence of multicollinearity. Originally, the abbreviated FFMQ predicted 0.072 of the variance in relationship positivity, and when the MCRS was added, both predicted 0.271 of the variance in relationship positivity and the  $R^2$  change was significant. The MCRS accounted for an additional 20% of variance in relationship positivity above and beyond

the abbreviated FFMQ ( $\Delta R^2 = 0.199$ ;  $F(1, 368) = 100.48$ ,  $p < 0.001$ ).

The MCRS was negatively associated with relationship negativity ( $\beta = -0.502$ ,  $p < 0.001$ ), and the abbreviated FFMQ was not uniquely or significantly associated with relationship negativity ( $\beta = -0.062$ ,  $p = 0.246$ ) while accounting for both measures. There was no evidence of multicollinearity. Originally, the abbreviated FFMQ predicted 0.091 of the variance in relationship negativity. However, when the MCRS was added, both predicted 0.285 of the variance and the  $R^2$  change was significant. The MCRS

**Table 5** Correlations amongst the MCRS, each subscale, relational outcomes, and individual mindfulness

	MCRS overall	Non-judging	Patience	Beg.'s mind	Trust of self	Non-striving	Acceptance	Letting go	Notice	QMI	Pos	Neg	SSI	A-FFMQ
MCRS (overall)														
Non-judging	.85**													
Patience	.84**	.71**												
Beginner's mind	.84**	.74**	.71**											
Trust of self	.82**	.67**	.66**	.63**										
Non-striving	.80**	.65**	.66**	.66**	.64**									
Acceptance	.79**	.65**	.60**	.67**	.66**	.62**								
Letting go	.72**	.53**	.48**	.48**	.49**	.49**	.43**							
Notice	.84**	.64**	.66**	.67**	.68**	.64**	.67**	.47**						
QMI	.63**	.49**	.48**	.49**	.54**	.45**	.44**	.61**	.47**					
Positivity	.52**	.36**	.39**	.39**	.41**	.40**	.36**	.56**	.39**	.67**				
Negativity	-.53**	-.46**	-.39**	-.39**	-.44**	-.37**	-.32**	-.57**	-.37**	-.72**	-.56**			
SSI	.46**	.43**	.39**	.39**	.40**	.34**	.30**	.41**	.31**	.61**	.44**	-.54**		
A-FFMQ	.46**	.36**	.40**	.33**	.37**	.32**	.30**	.48**	.34**	.20**	.27**	-.30**	.24**	

MCRS Mindfulness in Couple Relationships Scale, *Beg.'s mind* beginner's mind, *QMI* Quality of Marriage Index, *Pos.* positivity, *Neg.* negativity, *SSI* Sexual Satisfaction Index, *A-FFMQ* Abbreviated Five Facet of Mindfulness Questionnaire

\*\*  $p < .01$

accounted for an additional 19% of variance in negativity above and beyond the abbreviated FFMQ ( $\Delta R^2 = 0.194$ ;  $F(1, 306) = 83.15$ ,  $p < 0.001$ ).

The MCRS was positively associated with sexual satisfaction ( $\beta = 0.451$ ,  $p < 0.001$ ), and the abbreviated FFMQ was not uniquely or significantly associated with sexual satisfaction ( $\beta = 0.027$ ,  $p = 0.615$ ) while accounting for both measures. There was no evidence of multicollinearity. Originally, the abbreviated FFMQ predicted 0.058 of the variance in sexual satisfaction. However, when the MCRS was added, both predicted 0.216 of the variance and the  $R^2$  change was significant. The MCRS accounted for 16% of the variance in sexual satisfaction above and beyond the abbreviated FFMQ ( $\Delta R^2 = 0.158$ ;  $F(1, 365) = 73.39$ ,  $p < 0.001$ ).

## Discussion

The Mindfulness in Couple Relationships Scale (MCRS) was designed by primarily creating theoretically informed items (28 items in the final measure) and adapting relevant items (3 items in the final measure) from other measures to be applied to couple relationship processes. Our purpose was to provide internal consistency for couples-focused mindfulness-based prevention and intervention programs, as well as to create a measure of couple relationship mindfulness that is multifaceted in nature for use in basic research on couple mindfulness. The factor structure of the MCRS was tested in a large, racially and economically diverse sample and was found to have strong reliability, construct validity, and concurrent and convergent validity. The MCRS was also found to have incremental validity when compared to the abbreviated FFMQ, indicating the MCRS uniquely predicts the majority of variance in relational outcomes compared to an individual mindfulness measure that has historically been used in this area of research. Thus, the measure can serve to advance both applied and basic science studies of mindfulness in the context of couple relationships. There may also be some utility of this measure in clinical practice; however, testing its practical use and benefit has yet to be documented.

In an effort to advance the field of mindfulness and couple relationships, the factor structure of a measure of couple relationship mindfulness was tested and validated utilizing a multi-dimensional approach based on Kabat-Zinn's (2009) description of the seven attitudes of mindfulness, as well as an eighth overarching dimension of noticing (self and other). The validated MCRS can be used as a research measure since historically, studies of the influence of mindfulness on couple relationship

satisfaction and functioning focused on mindfulness unidimensionally. These studies were singularly focused on the awareness element of mindfulness; however, there has been a recent shift to delve into the mindful facets and their association with relationship outcomes. For example, Lenger et al.'s (2017) dyadic study of the influence of five mindfulness facets (observing, describing, non-reactivity, acting with awareness, and nonjudgement) on relationship quality found that when considered all together, only nonjudgement of inner thoughts was associated with one's own relationship satisfaction and that only non-reactivity was uniquely important to one's spouse's relationship satisfaction. By using the facets as individual predictors instead of as a global measure, researchers are better able to understand the relative value of each subscale in specific types of relationships. Expanding on this study in a sample of racially and economically diverse couples, McGill et al. (2020) assessed the dyadic influence of three mindfulness facets (non-reactivity, acting with awareness, and nonjudgement) on relationship quality and sexual satisfaction. Findings indicated that non-reactivity was most strongly related to one's own and partner's relationship quality, whereas women's acting with awareness was most strongly associated with one's own and partner's sexual satisfaction. This study also emphasized the importance of considering the different facets for cross-dyad influences and indicates specific facets or subscales may be differentially influential based on the relational outcome of interest. These studies, and others (e.g., Desrosiers et al., 2013; Iani et al., 2017), highlight the importance of the use of a multi-dimensional measure.

The MCRS includes 8 facets—*non-judging*, *patience*, *beginner's mind*, *trust of self*, *non-striving*, *acceptance*, *letting go*, and *noticing* (self and others)—and specifically focuses on the couple relationship. Although there are other multi-dimensional relationship measures (e.g., FFMQ-S; AAIRS), they have limitations. For example, the FFMQ-S (Adam et al., 2015) is focused solely on the sexual aspect of a romantic relationship, and although the AAIRS (Daks et al., 2021) is concentrated on regular interactions with an intimate partner, it only utilizes two subscales (attentive awareness and inattention or distraction) which can limit understanding details about the specifics of how and whether other aspects of mindfulness influence relationship well-being. The expanded focus on multiple facets and principles of mindfulness beyond awareness is the most significant contribution of the MCRS development. Furthermore, contextualizing multiple dimensions and practices within the couple relationship creates an even better conceptual alignment when assessing a range of relational outcomes.

Although the current paper highlighted several couple relationship-focused mindfulness measures (see Adam et al., 2015; Daks et al., 2021; Kimmes et al., 2017), there is no evidence of a study that has utilized a multi-dimensional measure of couple mindfulness to predict relational outcomes. This is surely a next step since the criterion validity results of the subscales indicated that facets and principles of couple mindfulness are associated with relationship quality indicators. The subscales of the measure provide an opportunity to investigate the most essential aspects of mindfulness in the couple relationship or whether all aspects are important for couple well-being. For example, based on the size of the correlations, the “Letting Go” subscale appeared to be most strongly associated with the four relational outcomes, which is particularly noteworthy because no other couple mindfulness measure includes this aspect. Multiple linear regressions utilizing all subscales as predictors of relationship outcomes would be an important next step to test this preliminary result; however, it was not assessed here since the focus of the study was the development and validation of the measure.

As Kimmes et al. (2017) noted, couple relationships are marked by intimacy and are a source of strong understanding and connection. They are, therefore, substantively different from other relationships such as those with friends or co-workers. Thus, a context-specific measure is important because individuals behave, think, and engage differently in isolation and across relationships—and individuals may be more or less mindful in these distinct instances (Haun et al., 2020). In the current study, a moderate correlation between the MCRS and abbreviated FFMQ provides evidence that a person may be generally mindful but not as mindful in their couple relationships—or vice versa, more mindful with an intimate partner and less mindful generally. Although the current study did not assess whether one’s ability to be presently and nonjudgmentally aware is more easily accessible in couple relationships than in other less intimate relationships, it was apparent that the MCRS is a stronger predictor of indicators of relationship quality compared to the validated and individually focused abbreviated FFMQ. This novel finding and contribution is noted with caution, however, since the full FFMQ was not utilized in the current study. This is a particularly interesting finding considering that the vast majority of research published on mindfulness and couple relationships has utilized an individually focused measure of mindfulness as a predictor of

relationship outcomes rather than a couple mindfulness measure (see exceptions Khorasani et al., 2021; Kimmes et al., 2020). Our study provides evidence that mindfulness in interactions with one’s partner may be distinct from general mindfulness or mindfulness in a parent–child relationship, for example. This type of context-specific measure of couple relationships may be able to more accurately capture how individuals’ mindfulness in the couple realm influences the well-being of the couple relationship. This type of contextual measure may also allow researchers to assess mindfulness across the ecological system of an individual and determine whether there are distinctions and similarities across contexts. Considering this, the MCRS offers a unique contribution to the mindfulness and relationship literature and is a distinctive example of how context-based information may be more clearly linked to behaviors in a specific context.

The MCRS is offered as an efficient 31-item assessment of eight facets of mindfulness in couple relationships. It is completed, on average, in 10 min and was designed to make sense to respondents who have no experience with or knowledge of mindfulness-based practices. In regard to calculating overall and subscale scores for the MCRS, researchers and practitioners have several options. Inclusion criteria for the current study included completing all items of the measure. This enhanced the validity of the factor structure and allowed us to calculate sum scores that enhanced variability. Researchers, however, can make informed choices as to whether they use complete data (either by virtue of no missingness or by reliable imputation methods) for sum scores, or to use mean scores from datasets with missingness on item responses.

Researchers can utilize either individual subscale scores or the full measure of couple relationship mindfulness depending on the research question. Utilizing the total score would reflect the overarching couple-focused relational mindfulness construct; however, as informed by previous studies highlighted above, the use of subscales as individual measures is strongly encouraged given the important findings related to the distinct facets of general mindfulness. The data also corroborated that either approach is appropriate—the item-to-total correlations validate the use of the full scale, and the reliabilities and factor loadings on the seven of the eight dimensions validate the subscale use. Using the MCRS subscales would make it possible to explore the relative influence of individual facets on outcomes, and results of empirical studies

can inform decisions about foci or intervention points for couples in therapy or educational programs. Although not meant to be a diagnostic or screening tool, clinicians could use the measure as a discussion launch, having couples discuss their answers and scores to develop shared meaning and/or discuss needs related to specific couple mindfulness facets/practices. There also may be some utility for practice particularly since the dimensions represent specific, identifiable practices that could be the focus of interventions. At present, the clinical use of the measure cannot be asserted but further refinement and use of the measure may lead to that. Further, because the conceptual basis of the MCRS is grounded in Kabat-Zinn's (2009) commonly cited and used description of mindfulness, it can be considered inclusive of common practices taught in mindfulness-based strategies. This enhances internal consistency between program content and measurement of expected outcomes, as well as the ability to inform adjustments or modifications to programs. This is highly valuable for logic model planning and implementation (McDavid & Hawthorn, 2006).

### Limitations and Directions for Future Research

This study had several strengths including the large, racially and economically diverse sample of community-based respondents, the theoretical basis of the measure's development, and the use of several forms of validity testing; however, there were limitations to consider that can inform future research. First, further validation of the factor structure in other samples of couples not represented in our study, including LGBTQ+ individuals and couples and couples from other regions in the USA and other countries, is warranted since the couples in this sample are from a singular state in the USA and all identified as different-gender couples. This may help refine or adapt the MCRS to be most relevant for the population being studied. Additionally, the respondents in this study were part of a larger efficacy study where couples were randomly assigned to a program that taught mindfulness-based stress reduction techniques, or a no-program control group; thus, a portion of respondents in this study had been exposed to concepts of mindfulness approximately 2 years before this assessment. This exposure may have influenced the comfort with answering the questions or biased their responses. A

longitudinal study examining changes in the MCRS after participation in a mindfulness-based program would be valuable for future research and programs. The current study utilized self-report data, as this is the most common approach to assessment in family sciences with large samples. Since mindfulness is an internal skill that may be hard to capture observationally by a researcher or outsider, this will likely remain a limitation of all mindfulness measures; however, new research on the behavioral manifestations of mindfulness indicates observational assessments are feasible (Kaplan et al., 2018). An observational measure of mindfulness in couple relationships, as well as partner report, may better capture a picture of one's mindfulness level within relational processes. Finally, our assessments of validity were conducted cross-sectionally which cannot test direction of associations or whether the MCRS is predictive over time of future relationship well-being.

The current sample assessed the factor structure of the MCRS of individuals in couple relationships, and although the data were rendered independent, assessing the dyadic nature of the measure by conducting dyadic confirmatory factor analyses is a potential next step. Mapping the subscales of the MCRS to components of Karremans' framework, especially over time, is a valuable action step for the field, as well. Additionally, to make the value of this new measure more evident, testing for measurement invariance across time is an important step. This would be particularly important for mindfulness-based intervention, since much of the research on mindfulness-based interventions indicate shifts in mindful attitudes and behaviors after participation and assuring similar factor structure over time is critical (Quaglia et al., 2016).

In sum, this study introduced and validated the MCRS as an additional tool in the collection of context-specific mindfulness assessments currently available. The measure is based on a comprehensive framework of mindfulness, is multi-dimensional, and is specific to the couple relationship. Researchers and practitioners can make use of either full-scale or subscale scores, depending on research questions and clinical goals. This measure serves to advance continued growth in the study of mindfulness in couple relationships.



## Appendix

Final Scale Version with Format and Response Options.

Instructions: Read the following items and indicate the degree to which you agree or disagree with the statement

	Strongly disagree ①	Disagree ②	Somewhat disagree ③	Neither disagree or agree ④	Somewhat agree ⑤	Agree ⑥	Strongly agree ⑦
1 I observe my experiences with my partner without judging	①	②	③	④	⑤	⑥	⑦
2 Even when it makes me uncomfortable, I allow my partner to express his/her feelings	①	②	③	④	⑤	⑥	⑦
3 I listen to my partner's ideas without judgement	①	②	③	④	⑤	⑥	⑦
4 I observe my partner's emotions without judging	①	②	③	④	⑤	⑥	⑦
5 I take time to thoughtfully be present with my partner	①	②	③	④	⑤	⑥	⑦
6 I carefully listen to my partner when they are speaking without regard for time	①	②	③	④	⑤	⑥	⑦
7 I rush through activities with my partner without really paying attention to them	①	②	③	④	⑤	⑥	⑦
8 I tune into my partner when they are talking to me without regard for time	①	②	③	④	⑤	⑥	⑦
9 My interactions with my partner are opportunities to learn new things about them	①	②	③	④	⑤	⑥	⑦
10 Each moment with my partner is an opportunity for new or unique experiences	①	②	③	④	⑤	⑥	⑦
11 I keep an open mind when talking to my partner	①	②	③	④	⑤	⑥	⑦
12 I am capable of being present in my relationship	①	②	③	④	⑤	⑥	⑦
13 I am able to purposefully participate in my relationship	①	②	③	④	⑤	⑥	⑦
14 I trust my abilities in my relationship	①	②	③	④	⑤	⑥	⑦
15 I can "just be" with my partner	①	②	③	④	⑤	⑥	⑦
16 I do not try to change my partner	①	②	③	④	⑤	⑥	⑦
17 I can spend time with my partner without trying to achieve a goal	①	②	③	④	⑤	⑥	⑦
18 During arguments I accept my partner has a different point of view than I do	①	②	③	④	⑤	⑥	⑦
19 I accept the positive and negative characteristics of my partner	①	②	③	④	⑤	⑥	⑦
20 I accept my partner for who my partner is today	①	②	③	④	⑤	⑥	⑦
21 Negative emotions related to my partner take over my everyday thoughts	①	②	③	④	⑤	⑥	⑦
22 After conflict with my partner I continue to be overwhelmed by negative feelings	①	②	③	④	⑤	⑥	⑦
23 I easily let go of negative emotions towards my partner	①	②	③	④	⑤	⑥	⑦
24 I get stuck in my negative emotions toward my partner	①	②	③	④	⑤	⑥	⑦
25 I notice my feelings toward my partner	①	②	③	④	⑤	⑥	⑦
26 I am aware when I am feeling negative towards my partner	①	②	③	④	⑤	⑥	⑦
27 I am attentive to my partner	①	②	③	④	⑤	⑥	⑦
28 I notice when my partner seems upset	①	②	③	④	⑤	⑥	⑦
29 I often feel unaware of my partner's thoughts and feelings	①	②	③	④	⑤	⑥	⑦
30 I notice when my partner appears distracted	①	②	③	④	⑤	⑥	⑦
31 I notice when my partner makes efforts in our relationship	①	②	③	④	⑤	⑥	⑦

Directions for Scoring:

1. Reverse code items 7, 21, 22, 24 and 29
2. Total measure directions:
  - a. Sum or mean all items, excluding original items #7, 21, 22, 24, and 29 and including the reverse coded versions
3. Subscale creation:
  - a. Nonjudging: sum or mean items 1–4
  - b. Patience: sum or mean items 5–8. Note that item 7 should be reverse coded
  - c. Beginner's Mind: sum or mean items 9–11
  - d. Trust of Self: sum or mean items 12–14
  - e. Non-striving: Sum or mean items 15–17
  - f. Acceptance: Sum or mean items 18–20
  - g. Letting Go: Sum or mean items 21–24. Note that items 21, 22, and 24 should be reverse coded
  - h. Noticing: Sum or mean items 25–31. Note that item 29 should be reverse coded
4. Items do not have to remain in this order and can be randomly ordered

**Author Contribution** JM: co-designed the measure, co-executed the study, conducted the data analyses, and drafted the paper; FAB: co-designed the measure, co-executed the study, provided access to the data, and edited each iteration of the developing and final paper; LB: co-designed the measure, co-executed the study, and edited each iteration of the developing and final paper.

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**Data Availability** As data from the funded program evaluation study are still being analyzed for other purposes, data are not currently publicly available. Analysis codes and inquiries about data usage may be available by emailing the corresponding author.

## Declarations

**Ethics Approval** The institutional review board of Auburn University approved the study. All procedures were in accordance with the ethical standards of the institutional review board and with the 1964 Helsinki declaration and its later amendments.

**Informed Consent** Informed consent was obtained from all individuals included in the study.

**Conflict of Interest** The authors declare no competing interests.

## References

- Acitelli, L. K. (1992). Gender differences in relationship awareness and marital satisfaction among young married couples. *Personality and Social Psychology Bulletin*, 18(1), 102–110. <https://doi.org/10.1177/0146167292181015>
- Adam, F., Heeren, A., Day, J. M., & de Sutter, P. (2015). Development of the Sexual Five-Facet Mindfulness Questionnaire (FFMQ-S): Validation among a community sample of French-speaking women. *Journal of Sex Research*, 52(6), 617–626. <https://doi.org/10.1080/00224499.2014.894490>
- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, 13(1), 27–45. <https://doi.org/10.1177/1073191105283504>
- Baminiwatta, A., & Solangaarachchi, I. (2021). Trends and developments in mindfulness research over 55 years: A bibliometric analysis of publications indexed in Web of Science. *Mindfulness*, 12(9), 2099–2116. <https://doi.org/10.1007/s12671-021-01681-x>
- Barnes, S., Brown, K. W., Krusemark, E., Campbell, W. K., & Rogge, R. D. (2007). The role of mindfulness in romantic relationship satisfaction and responses to relationship stress. *Journal of Marital and Family Therapy*, 33(4), 482–500. <https://doi.org/10.1111/j.1752-0606.2007.00033.x>
- Block-Lerner, J., Adair, C., Plumb, J. C., Rhatigan, D. L., & Orsillo, S. M. (2007). The case for mindfulness-based approaches in the cultivation of empathy: Does nonjudgmental, present-moment awareness increase capacity for perspective-taking and empathic concern? *Journal of Marital and Family Therapy*, 33(4), 501–516. <https://doi.org/10.1111/j.1752-0606.2007.00034.x>
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822–848. <https://doi.org/10.1037/0022-3514.84.4.822>
- Burrows, L. (2011). Relational mindfulness in education. *Encounter: Education for Meaning and Social Justice*, 24(4), 24–29.
- Carson, J. W., Carson, K. M., Gil, K. M., & Baucom, D. H. (2004). Mindfulness-based relationship enhancement. *Behavior Therapy*, 35(3), 471–494. [https://doi.org/10.1016/S0005-7894\(04\)80028-5](https://doi.org/10.1016/S0005-7894(04)80028-5)
- Daks, J. S., Rogge, R. D., & Fincham, F. D. (2021). Distinguishing the correlates of being mindfully vs. mindlessly coupled: Development and validation of the Attentive Awareness in Relationships Scale (AAIRS). *Mindfulness*, 12(6), 1361–1376. <https://doi.org/10.1007/s12671-021-01604-w>
- de Bruin, E. I., Topper, M., Muskens, J. G. A. M., Bogels, S. M., & Kamphuis, J. H. (2012). Psychometric properties of the Five Facets Mindfulness Questionnaire (FFMQ) in a meditating and a non-meditating sample. *Assessment*, 19(2), 187–197. <https://doi.org/10.1177/1073191112446654>
- Desrosiers, A., Klemanski, D. H., & Nolen-Hoeksema, S. (2013). Mapping mindfulness facets onto dimensions of anxiety and depression. *Behavior Therapy*, 44(3), 373–384. <https://doi.org/10.1016/j.beth.2013.02.001>
- DeVellis, R. F. (2017). *Scale development: Theory and applications* (4th ed.). Sage Publications.
- Duncan, L. G. (2007). *Assessment of mindful parenting among parents of early adolescents: Development and validation of the Interpersonal Mindfulness in Parenting scale*. [Unpublished master's thesis]. The Pennsylvania State University.
- Fincham, F. D., & Linfield, K. J. (1997). A new look at marital quality: Can spouses feel positive and negative about their marriage? *Journal of Family Psychology*, 11(4), 489–502. <https://doi.org/10.1037/0893-3200.11.4.489-502>
- Frank, J. L., Jennings, P. A., & Greenberg, M. T. (2016). Validation of the mindfulness in teaching scale. *Mindfulness*, 7(1), 155–163. <https://doi.org/10.1007/s12671-015-0461-0>
- Gambrel, L. E., & Keeling, M. L. (2010). Relational aspects of mindfulness: Implications for the practice of marriage and family therapy. *Contemporary Family Therapy*, 32(4), 412–426. <https://doi.org/10.1007/s10591-010-9129-z>
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998). *Multivariate data analysis* (5th ed.). Prentice-Hall.
- Haun, V. C., Nubold, A., & Rigotti, T. (2020). Being mindful at work and at home: A diary study on predictors and consequences of domain-specific mindfulness. *Journal of Occupational Health Psychology*, 25(5), 315–329. <https://doi.org/10.1037/ocp0000263>
- Hayes, A. F., & Coutts, J. J. (2020). Use omega rather than Cronbach's alpha for estimating reliability. But.... *Communication Methods and Measures*, 14(1), 1–24. <https://doi.org/10.1080/19312458.2020.1718629>
- Iani, L., Lauriola, M., Cafaro, V., & Didonna, F. (2017). Dimensions of mindfulness and their relations with psychological well-being and neuroticism. *Mindfulness*, 8(3), 664–676. <https://doi.org/10.1007/s12671-016-0645-2>
- IBM. (n.d.). *Collinearity diagnostics*. Retrieved from [https://www.ibm.com/support/knowledgecenter/en/SSLVMB\\_23.0.0/spss/tutorials/reg\\_collin\\_01.html](https://www.ibm.com/support/knowledgecenter/en/SSLVMB_23.0.0/spss/tutorials/reg_collin_01.html)
- James, G., Witten, D., Hastie, T., & Tibshirani, R. (2013). *An introduction to statistical learning: With applications in R* (p. 176). Springer.
- Johns, K. N., Allen, E. S., & Gordon, K. C. (2015). The relationship between mindfulness and forgiveness of infidelity. *Mindfulness*, 6(6), 1462–1471. <https://doi.org/10.1007/s12671-015-0427-2>
- Kabat-Zinn, J. (2009). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness*. Delta.
- Kabat-Zinn, M., & Kabat-Zinn, J. (1998). *Everyday blessings: The inner work of mindful parenting*. Hachette Books.

- Kaplan, D., Raison, C., Milek, A., Tackman, A., Pace, T., & Mehl, M. (2018). Dispositional mindfulness in daily life: A naturalistic observation study. *PLoS One*, 13(11), e0206029. <https://doi.org/10.1371/journal.pone.0206029>
- Karremans, J. C., Schellekens, M. P., & Kappen, G. (2017). Bridging the sciences of mindfulness and romantic relationships: A theoretical model and research agenda. *Personality and Social Psychology Review*, 21(1), 29–49. <https://doi.org/10.1177/1088868315615450>
- Kenny, D. A. (2015). *Measuring model fit*. Retrieved from <http://www.davidakenny.net/cm/fit.htm>
- Khorasani, E., Farrokhi, H., Shoja, E., Moghaddam, M., & Kimiaei, S. A. (2021). Mindfulness in the context of a romantic relationship to predict relationship satisfaction. *International Journal of Psychosocial Rehabilitation*, 25(1), 401–413.
- Kimmes, J. G., Jaurequi, M. E., May, R. W., Srivastava, S., & Fincham, F. D. (2017). Mindfulness in the context of romantic relationships: Initial development and validation of the Relationship Mindfulness Measure. *Journal of Marital and Family Therapy*, 44(4), 575–589. <https://doi.org/10.1111/jmft.12296>
- Kimmes, J. G., Jaurequi, M. E., Roberts, K., Harris, V. W., & Fincham, F. D. (2020). An examination of the association between relationship mindfulness and psychological and relational well-being in committed couples. *Journal of Marital and Family Therapy*, 46(1), 30–41. <https://doi.org/10.1111/jmft.12388>
- Lenger, K. A., Gordon, C. L., & Nguyen, S. P. (2017). Intra-individual and cross-partner associations between the five facets of mindfulness and relationship satisfaction. *Mindfulness*, 8(1), 171–180. <https://doi.org/10.1007/s12671-016-0590-0>
- MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods*, 1(2), 130–149. <https://doi.org/10.1037/1082-989X.1.2.130>
- McCaffrey, S., Reitman, D., & Black, R. (2017). Mindfulness in Parenting Questionnaire (MIPQ): Development and validation of a measure of mindful parenting. *Mindfulness*, 8(1), 232–246. <https://doi.org/10.1007/s12671-016-0596-7>
- McDavid, C. J., & Hawthorn, R. L. (2006). *Program evaluation and performance measurement: An introduction to practice*. Sage.
- McGill, J., & Adler-Baeder, F. (2020). Exploring the link between mindfulness and relationship quality: Direct and indirect pathways. *Journal of Marital and Family Therapy*, 46(3), 523–540. <https://doi.org/10.1111/jmft.12412>
- McGill, J. M., Burke, L. K., & Adler-Baeder, F. (2020). The dyadic influences of mindfulness on relationship functioning. *Journal of Social and Personal Relationships*, 37(12), 2941–2951. <https://doi.org/10.1177/0265407520944243>
- McGill, J., Adler-Baeder, F., & Rodriguez, P. (2016). Mindfully in love: A meta-analysis of the association between mindfulness and relationship satisfaction. *Journal of Human Sciences and Extension*, 4(1), 89–101. Retrieved from <https://www.jhseonline.com/article/view/623>
- McIver, J., & Carmines, E. G. (1981). *Unidimensional scaling* (Vol. 24). Sage.
- Neff, L. A., & Karney, B. R. (2005). Gender differences in social support: A question of skill or responsiveness? *Journal of Personality and Social Psychology*, 88(1), 79–90. <https://doi.org/10.1037/0022-3514.88.1.79>
- Nhat Hanh, T. (1992). *Peace is every step: The path of mindfulness in everyday life*. Bantam Books.
- Norton, R. (1983). Measuring marital quality: A critical look at the dependent variable. *Journal of Marriage and the Family*, 45(1), 141–151. <https://doi.org/10.2307/351302>
- Parent, J., Clifton, J., Forehand, R., Golub, A., Reid, M., & Pichler, E. R. (2014). Parental mindfulness and dyadic relationship quality in low-income cohabiting black stepfamilies: Associations with parenting experienced by adolescents. *Couple and Family Psychology*, 3(2), 67–82. <https://doi.org/10.1037/cfp0000020>
- Pratscher, S. D., Wood, P. K., King, L. A., & Bettencourt, B. A. (2019). Interpersonal mindfulness: Scale development and construct validation. *Mindfulness*, 10(6), 1044–1061. <https://doi.org/10.1007/s12671-018-1057-2>
- Quaglia, J. T., Braun, S. E., Freeman, S. P., McDaniel, M. A., & Brown, K. W. (2016). Meta-analytic evidence for effects of mindfulness training on dimensions of self-reported dispositional mindfulness. *Psychological Assessment*, 28(7), 803–818. <https://doi.org/10.1037/pas0000268>
- Quinn-Nilas, C. (2020). Self-reported trait mindfulness and couples' relationship satisfaction: A meta-analysis. *Mindfulness*, 11(4), 835–848. <https://doi.org/10.1007/s12671-020-01303-y>
- Rosen, C., Brown, J., Heiman, S., Leiblum, C., Meston, R., Shabsigh, D., Ferguson, R., & D'Agostino, R. (2000). The Female Sexual Function Index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. *Journal of Sex and Marital Therapy*, 26, 191–208. <https://doi.org/10.1080/009262300278597>
- Snell, W. E. (2002). The Relationship Awareness Scale: Measuring relational-consciousness, relational-monitoring, and relational-anxiety. In W. E. Snell Jr. (Ed.), *New directions in the psychology of intimate relations: Research and theory*. Snell Publications.
- Stanley, S. (2012). Mindfulness: Towards a critical relational perspective. *Social and Personal Psychology Compass*, 6(9), 631–641. <https://doi.org/10.1111/j.1751-9004.2012.00454.x>

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