

**The Multidimensional Trauma Recovery and Resiliency Instrument:
Preliminary Examination of an Abridged Version**

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Abstract

This paper describes two studies leading to the construction of and psychometric support for the MTRR-99, a shortened version of the Multidimensional Trauma Recovery and Resiliency Scale (MTRR-135, formerly MTRR). In the first study, the original body of MTRR-135 data was reevaluated to remove psychometrically weak or theoretically unnecessary items. The remaining 99 items were then assessed for reliability, validity, and internal consistency. In the second study, the new MTRR-99 was applied to assess the recovery status of 164 incarcerated women prisoners with extensive abuse histories. Together, these two studies further document the utility of a multidimensional approach to assessing trauma impact, recovery, and resiliency; in addition, they provide preliminary evidence for the MTRR-99 as a viable measure for use with clinical and non-clinical populations.

Key words: trauma, assessment, recovery, resiliency, MTRR-135, MTRR-99

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After posttraumatic stress disorder (PTSD) was introduced into the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM—III; American Psychiatric Association, 1980), a number of measures were developed to assess symptoms of PTSD. In this article we provide a preliminary report on the psychometric properties of a shortened version of the Multidimensional Trauma Recovery and Resiliency Measure (MTRR; Harvey, Liang, Harney, Koenen, Tummala-Narra, & Lebowitz, 2003) that goes beyond assessing PTSD symptoms to provide information about trauma recovery and resiliency.

The original Multidimensional Trauma Recovery and Resiliency measures, including a clinically directed interview (MTRR-I), a Q-sort (MTRR-Q), and a 135-item, observer-rated, Likert-type questionnaire and rating scale (MTRR-135) (Harvey, Westen, et al., 1994; Harvey et al., 2003), were developed to address the limitations of previous trauma measures. The impetus for their development was threefold. First, they were designed to be applicable to more diverse samples, including female and treated and untreated trauma survivors. Second, they reflected unique patterns of harm across individuals, rather than uniform responses across survivors. Third, they focused on health and recovery, rather than on psychopathology. And finally, they utilize clinician reports, rather self-reports. Together, the various measures of the MTRR assess multifaceted and complex patterns of trauma response, and may potentially capture the variety of outcomes that patients in trauma-focused treatments can attain (Chambers & Belicki, 1998; Grossman, Cook, Kepkep, & Koenen, 1999; Lam & Grossman, 1997; Liem, James, O'Toole, & Boudewyn, 1997; Tedeschi, Park, & Calhoun, 1998).

The Development of the Abridged Multidimensional Trauma Recovery and Resiliency Measures

In response to the need for a shortened, more clinically accessible version of the MTRR-135, the current authors proposed an abridged, ninety-nine-item version, called the MTRR-99. The primary goals in the design of the MTRR-99 were the establishment of a measure that

would reduce the number of items in the MTRR-135 while maintaining its content, psychometric acceptability, and methodology. Like the MTRR-135, the MTRR-99 relies on clinicians' observations and reports, rather than on self-report. Thus, it takes advantage of the clinical expertise of trained respondents, and does not rely on the self-reports of trauma survivors, who may suffer from significant impairments of memory and consciousness. Moreover, in the tradition of the original MTRR measures, the MTRR-99 assesses post-trauma functioning according to the domains outlined by Harvey's (1996) ecological framework: Authority Over the Remembering Process, Integration of Memory and Affect, Affect Tolerance and Regulation, Symptom Mastery, Self-Esteem, Self-Cohesion, Safe Attachment, and Meaning (see Table 1 for definitions). Finally, by reflecting, in a shortened format, the wide range of symptoms that apply to survivors of many types of traumatic histories (e.g., combat trauma, child sexual abuse, and domestic violence), the MTRR-99 provides an efficient new method for assessing trauma.

<<Insert Table 1 about here>>

Psychometric Studies Leading to the MTRR-99

The MTRR-135 (from which the MTRR-99 was derived) was developed and validated in a series of four studies (Harvey et al., 2003). The MTRR-135 demonstrated reasonable inter-rater reliability with both clinical and clinical research samples. Internal consistency was sound and, in the clinical sample, the measure drew significant distinctions between patients differing in clinician-estimated recovery status (Harvey et al., 2003). These findings supported the utility of the MTRR-135 in the detection and assessment of not only trauma symptoms, but also domain-specific expressions of trauma recovery and resiliency.

Findings also indicated that inter-rater reliabilities varied considerably among the 135 items comprising the MTRR-135, and each domain contained items with inter-rater reliabilities ranging from quite poor to quite good. These data, as well as the measure's long length, suggested a need to prune the MTRR-135 of less psychometrically sound items, shortening it for both ease of clinical administration and improved reliability. Another limitation of the MTRR-

135 was that it was tested on fairly homogenous patients enrolled in trauma-focused treatments. It was clear that additional studies that included more diverse populations of trauma survivors would be required to establish the cross-cultural utility of the MTRR measures, as well as their applicability to untreated trauma survivors.

This paper presents two investigations designed to address the issues described above. Specifically, the first study provides a preliminary examination of a shortened and somewhat revised version of the MTRR-135, namely the MTRR-99. In doing so, the study also describes the process by which original MTRR-135 items were retained or eliminated to create the MTRR-99. In this same population, the interrater reliability and coefficient alphas for this new version are then presented. The second study presents the psychometric properties of this revised 99-item measure when used with a new and largely untreated population of trauma survivors. The purpose of these investigations was to examine the psychometric strength and practical utility of the MTRR-99 for research with diverse groups of trauma survivors.

Study One: Constructing and Evaluating the MTRR-99

Method

Participants

This study used data collected in the initial studies of the MTRR-135 (Harvey et al., 2003). Study participants were 181 adult trauma survivors (86% female and 14% male) who were in treatment for sexual abuse or physical abuse in childhood, adolescence, or adulthood. Eighty-two percent were Caucasian, 9% were African American, 8% were Latino, and 1% were Asian American. The mean age of participants was 37 years (SD=11, range=14-62).

Many participants reported multiple types of trauma: 64% had experienced child physical abuse, 62%, child sexual abuse, 45%, adult-incident rape, and 35%, a combination of war combat and childhood physical or sexual abuse. Participants were also categorized according to clinician-reported recovery status: 17% were rated as largely recovered, 54% as partially

recovered, and 29% as largely unrecovered. The average time in current treatment as rated by clinicians was 30 months (SD=39, range: less than one month to 240 months).

Measures

Like the original 135-item MTRR, the MTRR-99 instructs clinical observers (treating clinicians or clinical research interviewers) to rate the applicability of each item to the individual being rated. Ratings are made on a five-point, Likert-type scale ranging from Not At All Descriptive to Highly Descriptive. Sample items for each domain can be found in Table 2. The measure itself is included in this special issue. The MTRR-135 was designed with ample clinical input to enable clinicians and clinical researchers to rate patients and untreated research participants on each of the eight domains of functioning highlighted by Harvey's (1996) ecological framework. The process of creating the original 135 items has been described in an earlier paper (Harvey et al., 2003).

Procedure

Following the completion of the initial series of psychometric studies (Harvey et al., 2003) the MTRR-135 was subjected to further analysis in the current study. Original items were retained or eliminated from the measure based on several criteria: (a) inter-rater reliabilities for each of the 135 items, (b) the correlations between individual item and total domain scores for each of the eight subscales, (c) the number of items comprising a given domain of the MTRR-135, and (d) the theoretical relevance of item content. The retained items and resultant subscales were then checked for internal consistency reliability (Chronbach's alpha) and inter-rater reliability (Pearson correlation's between pairs of raters).

More specifically, data from the original MTRR-135 study were reviewed item by item. For each item, inter-rater reliabilities from the original study were first considered. These reliabilities were based on the ratings of fifty-one patients (a subset of the total sample of 181 survivors) being seen in outpatient, trauma-focused psychotherapy, all with histories of child

sexual abuse, child physical abuse, and/or adult incident rape, who had been independently rated on all 135 original items by pairs of clinicians, including: (a) thirty-one senior clinical staff members paired with clinical trainees (pre-doctoral psychology trainees, post-doctoral psychology fellows, psychiatric residents, or clinical social work interns) with whom they co-conducted initial evaluation interviews, (b) ten pairs of co-leaders rating patients in trauma-focused psychotherapy groups, and (c) ten pairs of clinicians having shared but not necessarily comparable knowledge of the patients (e.g., an individual therapist and a psychopharmacologist).

Those items that had relatively lower levels of inter-rater reliability and/or relatively low correlations with domain totals as well as those that would increase domain coefficient alphas if eliminated were subjected to careful content analysis. These items were typically eliminated. In a few cases, items were reworded when deemed theoretically important in preserving a domain construct. This process resulted in a shortened and slightly reworded 99-item measure. The construct validity of the revised MTRR-99 subscales was tested; and finally, validity, inter-rater reliability, and internal reliability were compared with those of the 135-item version.

Results

Decisions regarding item retention were based on inter-rater reliabilities, number of items in the original subscale, examination of item-total correlations, and item content. Cutoff values were determined independently for each subscale, with the goals of: (a) producing shortened subscales with acceptable reliability and (b) preserving original subscale content.

Reliability and Item Analysis

Item analysis of the original 14 Authority over Memory items indicated that 13 items had an item-total correlation over .53. Two pairs of highly correlated items were combined, for a total of 11 items in the abbreviated subscale. The coefficient alpha for the shortened subscale was acceptable (.83) and comparable to that of the full Authority over Memory subscale (.85).

For the Integration of Memory and Affect subscale, item analysis indicated that four of the six original items had item-total correlations over .69. Of those remaining, one was deleted, but the other was retained due to vital item content. The coefficient alpha for the resulting five-item subscale was acceptable (.77) and similar to that of the full subscale (.75).

For the Affect Tolerance subscale, item analysis indicated that thirteen of the twenty-two items had item-total correlations over .50. Besides missing the item-total cut-off, most of the remaining items also had relatively low inter-rater reliability. Nevertheless, two of these were retained due to important item content. Internal consistency for the shortened subscale was good (.82) and comparable to the full Affect Tolerance subscale (.88).

Item analysis of the original seventeen Symptom Mastery items indicated that nine items had an item-total correlation over .50. Two of these items were considered theoretically unnecessary; and five of the items below this cut-off were seen as theoretically necessary. In sum, twelve items were retained for the abbreviated subscale. The coefficient alpha for the shortened subscale was acceptable (.76) and similar to that of the full subscale (.80).

As the original Self Esteem subscale included 30 items, a decision was made to reduce this subscale substantially. Item analysis indicated that seventeen of the thirty original items had item-total correlations over .55. Of the seventeen, seven were deleted as they had relatively low inter-rater reliability and expendable content. Six of those that missed the .55 cut-off, were retained due to important item content; two of these were combined as they were highly correlated. The coefficient alpha for the resulting fifteen-item subscale was good (.84) and comparable to that of the much longer subscale (.88).

For the Self Cohesion subscale, item analysis indicated that four of the twelve items had item-total correlations over .65. Two of these items were deleted as they had low inter-rater reliability and expendable content; four of the other items were retained due to important item content and good inter-rater reliability. Internal consistency for the short, eight-item subscale was acceptable (.72) and similar to that of the full subscale (.79).

Item analysis of the original twenty-one Safe Attachment items indicated that most of the safe attachment items were theoretically necessary, despite some relatively low item-total correlations and inter-rater reliabilities. Only four items were considered expendable. An additional item was created for the scale, and thus eighteen items were retained for the abbreviated subscale. The coefficient alpha for the shortened subscale was within acceptable range (.63) although lower than that of the full Safe Attachment subscale (.71).

As the original fifteen-item Meaning Making subscale was already relatively short and included theoretically important items, a decision was made not to reduce this subscale. All item-total correlations, most inter-rater reliabilities, and the internal consistency reliability for the subscale were fairly high ($\alpha = .85$).

The mean alpha for the eight subscales of the MTRR-99 was .78, which is considered within acceptable limits for widely used scales. Moreover, despite variability among clinician pairs in level of expertise and exposure to rated survivors, the inter-rater reliability was adequate for the composite MTRR-99 and all its domains (ranging from .78, $p < .001$ to .36, $p < .01$). When only the ten pairs of co-leaders of trauma groups (the type of pairs who would be expected to have the most comparable knowledge of patients) were assessed, inter-rater reliabilities for most domains increased. See Table 3 for a comparison of inter-rater reliabilities for the MTRR-135 (51 pairs of raters), the MTRR-99 (51 pairs of raters), and the MTRR-99 (10 pairs with comparable knowledge of patients).

Construct Validity of the MTRR-99

Construct validity is demonstrated by establishing convergent validity (constructs that theoretically should be related to each other are, in fact, observed to be related to each other) and discriminant validity (constructs that should not be related to each other are, in fact, observed to not be related to each other). Construct validity for the eight MTRR domains was tested using the 181 clinician's ratings from the original study. The discriminant validity of the eight separate scales versus a composite score was assessed and supported when reliability coefficients for

each of the subscales were higher than the inter-correlations between individual scales. The mean inter-correlation between MTRR scales was .61, with r 's ranging from .40 to .85 (see Table 4).

Convergent validity was further assessed by comparing the MTRR-99 scores with scores on a clinician rated index of recovery status because a putative measure of trauma resiliency and recovery would be expected to vary with other measures of recovery. Participants were categorized according to whether clinicians rated them as largely recovered, partially recovered, and largely unrecovered. A multiple analysis of variance using MTRR-99 domains as the dependent variables and recovery status as the independent variable revealed significant main effects for each of the eight scales at $p < .001$. F values were: 18.56 for Authority over Memory; 25.54 for Integration of Memory and Affect; 43.34 for Affect Tolerance; 26.86 for Symptom Mastery; 48.49 for Self Esteem; 17.43 for Self Cohesion; 27.50 for Safe Attachment; 35.35 for Meaning Making. As expected, subjects rated by their clinicians as largely recovered indicated greater resiliency and fewer symptoms on each of the eight MTRR-99 scales (see Table 5).

Finally, when the MTRR-135 was compared to the MTRR-99, the latter appeared to be psychometrically and theoretically stronger in several respects. First, it maintained similar levels of internal reliability consistency per domain, despite the fact that large numbers of items typically contribute towards boosting alphas. Second, inter-rater reliability for each domain was greater for the MTRR-99 based on trauma group leaders' ratings. Third, whereas several domains in the MTRR-135 were not significantly related to trauma recovery ratings, all of the domains in the MTRR-99 were significantly related to trauma recovery ratings.

Study Two: Psychometrics of the MTRR-99 in a Second Sample

The goal of this study was to examine data bearing on the reliability and validity of the MTRR-99 in a second sample. Following Study One, four new items were created for the measure, three pairs of items that were highly correlated and related in content were

consolidated to three single items, several items with relatively low inter-rater reliability were slightly reworded to clarify, but not change, their meanings. Study Two was conducted to assess the validity and reliability of the scales following these minimal revisions. Four domains of reliability and validity were assessed: (a) the coefficient alpha for each scale; (b) the inter-rater reliability using a sub-sample of 20 MTRR-99 protocols; (c) the discriminant validity of eight separate scales versus the use of a composite score by comparing correlations among MTRR scales and subscale alphas; and (d) construct validity by comparing MTRR subscale scores with scores on another trauma measure that assesses criteria for Disorders of Extreme Stress not Otherwise Specified (DESNOS) or “complex” PTSD.

Method

Participants

Of the approximately 200 women recruited for the study, 175 agreed to participate in an interview. Of the 175 interviews, 164 yielded complete, valid protocols. The sample included 61% African American, 38% Caucasian, and 1% Latina women most of whom had a high school education or less (72%). They reported relatively low household incomes (35% less than \$12,000/year; 74% less than \$36,000 /year). Most had children (86%) and were currently not married (81%). Sixteen percent of the participants reported that they were HIV positive, the most prevalent medical condition in the sample. The majority of the women reported surviving multiple types of abuse across four categories: childhood sexual abuse, child physical abuse, adult sexual assault, and adult physical assault. Forty-two percent reported having experienced all four types of abuse; only 5% of the participants had experienced none of these abuses.

Procedure

One hundred and sixty-four women incarcerated in a medium security women’s prison in South Carolina were interviewed as part of a study of “women’s life experiences.” The prison facility served as the “special needs” prison for women in the state, meaning that all female prisoners in need of chronic medical or psychological care were housed there. Participants were

recruited in three ways: (a) individuals referred by prison mental health staff; (b) individuals selected at random from a list of the inmates and asked to participate in an interview; and (c) individuals who had heard of the study from other participants and requested participation. The interviews normally lasted 2-3 hours and involved administration of: (a) the MTRR-I, (b) interviews regarding history of physical and sexual assault in childhood and adulthood, and (c) a set of self-report measures. More details of the study are described elsewhere (Bradley Davino, & Linney, 2004; Davino, 2000).

Interviewers included a doctoral candidate in clinical psychology, six other graduate students in clinical psychology, and one advanced undergraduate student. The principal investigator completed 87 interviews, the undergraduate interviewer completed 40 interviews, and the group of graduate interviewers completed 48 interviews. All interviewers received training in the impact of trauma on mental health, and in the administration of the interview protocols, including the MTRR-I. Four taped MTRR interviews were conducted by the principal investigator at a battered women's shelter, then listened to and scored by each interviewer. Scoring for these training tapes was reviewed and discussed with the principal investigator until consistency of scoring between interviewers was achieved. These four interviews were not included in the data set for this study.

After training was completed, twenty interviews were conducted and scored twice for inter-rater reliability analysis. To do this, interviewers observed the principal investigator conduct an MTRR interview with one of the participants in this study. Then both the principal investigator and observer scored the participant on the MTRR items. In addition, the principal investigator observed each interviewer conduct an MTRR interview with one of the participants. Then both the principal investigator and the observer scored the participant on the MTRR items.

Measures

The data presented in Study Two (which represent a subset of data collected in a larger study) include demographics, the MTRR-99 (rated based on the MTRR-I which is designed to

collect MTRR-99 data), physical and sexual assault histories collected via a structured interview (see Bradley, Davino & Linney, 2004; Davino, 2000), and the Structured Interview for Disorders of Extreme Stress (SIDES; Pelcovitz, van der Kolk, Roth, Mandel, Kaplan, & Resick, 1997; Zlotnick & Pearlstein, 1997). Only the SIDES will be described in detail here because the other measures have already been discussed in Study One or in other articles presented in this volume.

The SIDES is a structured interview and diagnostic criteria set for symptoms across seven functional domains: regulation of affect and impulses, regulation of attention and consciousness, self-perception, perception of the perpetrator, relationships with others, somatization, and systems of meaning. These domains are based on the diagnosis of “complex” PTSD or Disorders of Extreme Stress Not Otherwise Specified, a diagnostic category within the PTSD spectrum (Herman, 1992, b; Pelcovitz et al., 1997). Typically a diagnosis of DESNOS is made if interviewees report clinically significant symptoms in 6 of the 7 domains -- symptoms in the domain regarding perception of the perpetrator are not required. However, the somatization subscale was not administered, as it was not a focus of this study. Thus, in this study, participants needed to meet 5 of 6 criteria for a diagnosis of DESNOS. The SIDES has previously demonstrated reliability and validity (Pelcovitz et al., 1997; Zlotnick & Pearlstein, 1997), including an inter-rater reliability of .81 and coefficient alphas ranging from .53-.96. The SIDES also had good internal reliability in the current study (alphas ranging from .51-.82).

Results

Reliability

As with Study One, the data supported the internal reliability of the MTRR-99 subscales with an average coefficient alpha of .85, and subscale alphas ranging from .76 to .89 (see Table 6). Moreover, based on 20 pairs of raters, inter-rater reliabilities for each subscale were adequate with a mean of .67 (see Table 6).

<<Insert Table 6 about here>>

Preliminary Psychometric Properties

Reliability coefficients for each of the subscales were higher than the inter-correlations between individual scales supporting the use of eight separate scales in addition to a composite score. The mean inter-correlation between MTRR scales was .59, with r 's ranging from .38 to .72 (see Table 7).

We conducted a preliminary analysis of construct validity by testing whether MTRR domain scores predict current DESNOS diagnostic status. A 2 x 2 between-subjects multivariate analysis of variance was conducted for each of the MTRR scales and the MTRR composite score as dependent variables and DESNOS diagnostic criteria (scored as yes/no) as the independent variable. The data yielded a significant overall MANOVA using the Wilks Criterion, $F(8,154) = 8.19, p < .001$. In follow up univariate ANOVAs, we found lower scores on each of the MTRR-99 subscales for the women meeting SIDES criteria for DESNOS ($n = 102$), as compared to those not meeting the criteria ($n = 61$; see Table 6). That is, those who met the SIDES criteria for DESNOS also showed lower levels of trauma recovery and resiliency as assessed by the MTRR-99.

Discussion

The shortened MTRR-99 is a 99-item theory based, paper and pencil instrument that measures eight dimensions of trauma recovery and resiliency. The instrument is easy to complete, and it can generate both a graphic profile of an individual's areas of relative resiliency and deficit, a textual description of strengths and weaknesses within those domains, and treatment outcome goals linked to specific domains and to specific items within these domains.

Most other indices of "trauma recovery and resiliency" are criterion-referenced, in that they measure how closely the respondent matches a set of characteristics or behaviors thought to be associated with trauma recovery and resiliency. It is difficult to establish reliability and validity for such indices. As a theory-based measure, the MTRR-99 can meet the standard scientific criteria for a valid psychometric instrument. Further, the MTRR-99 emphasizes

behavior and specific experiences rather than general states of well-being and attitudes. Thus, the instrument is less susceptible to differences in interpretation by raters and it is more generalizable than other tests commonly in use.

The scales of the MTRR-99 demonstrated reasonable reliability and validity in clinical and non-clinical samples, supporting the utility of the MTRR-99 in the detection and assessment of not only trauma symptoms, but also resiliency and recovery status. Moreover, the domains of the MTRR-99 improve upon those of MTRR-135 in that they are shorter and are more highly related to recovery and resiliency status. That is, several domains of the MTRR-135 (i.e., Authority over Memory, Self-Cohesion, and Self-Esteem) were not significantly related to recovery status at the $p < .05$ level (Harvey et al., 2003; in contrast, all the domains of the MTRR-99 were significantly related to recovery status with higher p levels and F scores. Moreover, the MTRR-99 demonstrates increased inter-rater and internal reliability in a sample of incarcerated women.

Items on the MTRR-135 and MTRR-99 reflect actual experiences described in interviews of a directed sample of trauma survivors representing cross-cultural and situational diversity (i.e., multicultural survivors of domestic violence, child abuse, and war trauma) as well as symptoms and experiences observed by trauma experts. In the current study, each of the 135 resulting descriptions of trauma recovery and resiliency were used to rate 51 trauma survivors by pairs of clinicians. Experts then reviewed the 135-item pool and items were deleted or reworded which had relatively poor inter-rater reliability or low item-total correlations. The eight new subscales, based on 99 items were then tested for inter-rater reliability and internal consistency reliability. In Study One, they had adequate inter-rater reliabilities and coefficient alpha levels of .72 or better (except for Safe Attachment's Alpha of .63). In Study Two, they had significantly higher inter-rater reliability and internal consistency -- most alphas, including Safe Attachment, were above .84, meeting or exceeding the standard reliability criterion for individual and group psychometric diagnosis (DeVellis, 1991; Nunnally, 1978).

The validity of the MTRR-99 was confirmed in a variety of ways. In Study One, content validity was established by using actual experiences and statements drawn from interviews, along with the reliable confirmation and categorization of these by both raters and experts. Both studies provided preliminary evidence for construct validity -- the MTRR-99 subscales' successfully predicted a clinician rated index of Trauma Recovery Status in Study One (Harvey et al., 2003, and DESNOS status in Study Two. As expected, greater resiliency and fewer symptoms as indicated by the MTRR-99 Scales are positively associated with clinician rated trauma recovery and negatively associated with DESNOS status.

Finally, content and discriminant analysis established that the items constituted eight distinct dimensions of trauma recovery and resiliency (Authority over Memory, Integration of Memory and Affect, Affect Tolerance, Symptom Management, Self-Esteem, Self Cohesion, Safe Attachment, and Meaning Making). The assumption that the domains are separate but related to trauma recovery and resiliency is supported in the construct validity tests and by the correlations between MTRR-99 subscales for both studies. Correlations between scales are significant but modest indicating that the scales are related but separate and provide unique information.

Based on this process of developing and testing the MTRR-99 for reliability and validity, it is fair to conclude that the instrument is measuring the affective, cognitive, and behavioral characteristics described by Harvey's (1996) stage by dimension theory and that these characteristics can be reliably rated by clinicians treating trauma survivors, and researchers interviewing participants in a non-clinical setting.

Limitations and Future Directions

The low number of study participants in certain subgroups, including male gender, trauma-type, and cross-cultural populations may limit the generalizability of these findings. Study Two supported the reliability, validity, and utility of the English-language MTRR-99 in a sample of ethnic minority trauma survivors, however, and other studies presented in this special

issue (e.g., Daigneault, Cyr, & Tourigny, this issue; Radan, this issue) using non-English language versions of the measure are promising with respect to the MTRR-99's potential for cross-cultural studies. More such studies are needed and are in progress.

Another limitation is that for Study One clinician's assessments of recovery status and their responses on the MTRR-99 shared method variance (i.e., they both relied on clinician-reports to structured questionnaire items), and this may have increased the relationship between the two. The same is true for Study Two in that clinicians' provided ratings for the MTRR-99 and the SIDES (measure of DESNOS status). Concurrent and construct validity may be further confirmed by examining the MTRR-99's relation to multi-method indicators of trauma outcome.

In summary, the relatively wide variety of symptoms and strengths addressed by this measure may support its use, not only as a clinical measure, but also as a research measure, to be used in testing hypotheses about trauma recovery and resiliency. In examining trauma survivors' profiles, both the patterns that reveal universal human capacities and unique protective factors for each individual or subgroup that contribute to recovery and resiliency are important findings that may inform the design of specific interventions across cultures and diverse populations.

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Table 1

Definitions of the Multidimensional Trauma Recovery and Resiliency Domains

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- Domain I. Authority Over the Remembering Process: the point in the recovery process at which the trauma survivor is able to choose to recall or not recall the experiences that once eluded meaningful appraisal and/or intruded unbidden into consciousness.
- Domain II. Integration of Memory and Affect: the survivor's ability to feel what is remembered (i.e. to feel in the present some of the affects that attended the original experience) and to experience new feelings from remembering the past and reflecting upon it.
- Domain III. Affect tolerance and regulation: the range of feelings trauma survivors are able to experience and the extent to which they can bear and manage difficult feelings.
- Domain IV. Symptom mastery: the degree to which survivors can anticipate, manage, contain, or prevent the cognitive and emotional disruption that arises from posttraumatic arousal.
- Domain V. Self-esteem: the experience of self-regard (i.e., regarding oneself as worthy of care) and the capacity for self-care (i.e., the behavioral expression of self-regard).
- Domain VI. Self-cohesion: the extent to which survivors experience themselves as integrated or fragmented, in terms of thought, feeling, and action.
- Domain VII. Safe attachment: the ability of the survivor to develop feelings of trust, safety, and enduring connection in relationships with others.
- Domain VIII. Meaning making: the process by which a survivor struggles to understand and "metabolize" the impact and legacy of a traumatic past.
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Table 2

Sample Items from Abbreviated Multidimensional Trauma Recovery and Resilience Scale
(MTRR-99)

Domain I. Authority Over the Remembering Process	
52	Unwanted thoughts, memories or images intrude on consciousness.
4	Has difficulty recalling events from the very recent past.
Domain II. Integration of Memory and Affect	
11	When recalling painful or traumatic events s/he is able to remember feelings experienced at the time.
94	Can reflect upon painful events, including traumatic events, with varied and appropriate feeling.
Domain III. Affect Tolerance and Regulation	
30	Often feels emotionally numb.
93	Maintains a realistic view of situations even when emotions are strong.
Domain IV. Symptom Mastery and Positive Coping	
13.	Is readily startled.
44.	Practices and makes effective use of one or more stress management techniques (e.g. relaxation, meditation).
Domain V. Self Esteem (Self Care and Self Regard)	
45	Experiences impulses to behave in self-abusive ways, such as cutting, burning, whether or not s/he acts on these impulses.
33	Feels worthy of care and nurturance from others.
Domain VI. Self Cohesion	
57	Experiences dissociative states (e.g. feels like s/he leaves her/his body or that her/his feelings are somewhere else).
79	Feels like an integrated person whose actions and emotions fit together coherently.
Domain VII. Safe Attachment	
31	Is able to enter into and maintain safe and mutually satisfying relationships with intimate partners.
36.	Is unusually sensitive to (or is preoccupied with) issues of power and control in relationships.
Domain VIII. Meaning	
32	Understanding of painful or traumatic past is marked by excessive and unreasonable self-blame.
50	Is able to feel a realistic sense of hope and optimism about the future.

Table 3

Study One: Inter-rater Reliability of MTRR-99 and MTRR-135 Scores

	MTRR-135 (N=51 pairs)	MTRR-99 (N=51 pairs)	MTRR-99 (N=10 pairs of group co- leaders)
Composite	.71 ***	.66 ***	.80 **
Authority over Memory	.49 ***	.49 ***	.43 *
Integration of Memory & Affect	.37 **	.36 **	.68 **
Affect Tolerance	.50 ***	.48 ***	.76 **
Symptom Mastery	.67 **	.50 ***	.43 *
Self Esteem	.75 ***	.78 ***	.89 ***
Self Cohesion	.73 ***	.72 ***	.64 **
Safe Attachment	.68 ***	.61 ***	.79 **
Meaning-Making	.72 ***	.72 ***	.88 ***

* p < .05, ** p < .01, *** p < .001

Table 4

Study One: Inter-correlations of Mean Scores across MTRR-99 Domains (N=181)

	1	2	3	4	5	6	7
1. Authority over Memory							
2. Integration of Memory & Affect	.65						
3. Affect Tolerance	.63	.62					
4. Symptom Mastery	.48	.45	.64				
5. Self Esteem	.52	.51	.80	.62			
6. Self Cohesion	.56	.48	.62	.60	.63		
7. Safe Attachment	.44	.49	.61	.45	.62	.49	
8. Meaning-Making	.49	.62	.68	.60	.64	.50	.56

For all correlations, $p < .001$.

Table 5

Study One: MANOVA Results for MTRR-99 Scores by Recovery Status (df = 2, N = 141)

	Recovery Status	M	SD	F
Composite	1	3.80	.34	60.58***
	2	3.17	.42	
	3	2.67	.43	
Authority over Memory	1	3.91	.52	18.56***
	2	3.35	.60	
	3	2.94	.74	
Integration of Memory & Affect	1	3.77	.66	25.54***
	2	3.23	.73	
	3	2.56	.63	
Affect Tolerance	1	3.59	.47	43.34***
	2	2.90	.56	
	3	2.35	.51	
Symptom Mastery	1	3.77	.40	26.86***
	2	3.23	.59	
	3	2.72	.62	
Self Esteem	1	4.13	.45	48.49***
	2	3.44	.57	
	3	2.75	.61	
Self Cohesion	1	4.07	.60	17.43***
	2	3.42	.72	
	3	3.00	.77	
Safe Attachment	1	3.89	.73	27.50***
	2	3.29	.46	
	3	2.92	.45	
Meaning	1	3.42	.47	35.35***
	2	2.76	.57	
	3	2.28	.51	

*** p < .001

Recovery status: 1= largely to fully recovered; 2 = partially recovered; 3 = largely unrecovered.

Table 6

Study Two: Descriptive Statistics of Multidimensional Trauma Recovery and Resiliency

Domain	Full Sample M (SD) (N=164)	Alpha	Inter-Rater correlation	DESNOS + M (SD) (N=102)	DESNOS – M(SD) (N=61)	F(1,161) ^a
Authority over the remembering process	3.60(.87)	.84	.71**	3.85 (.84)	3.16 (.73)	27.47***
Integration of memory and affect	3.57 (.96)	.78	.54*	3.82 (.88)	3.12 (.96)	20.75***
Affect tolerance/ regulation of trauma affect	3.18 (.93)	.89	.68**	3.54 (.83)	2.56 (.74)	57.68***
Symptom mastery and positive coping	3.44 (.74)	.76	.61**	3.71 (.69)	2.97 (.57)	49.29***
Self-esteem (self-care and self-regard)	3.78 (.83)	.88	.77**	4.1 (.73)	3.3 (.78)	39.26***
Self-cohesion	4.13 (.87)	.86	.82**	4.40 (.73)	3.70 (.94)	28.88***
Safe attachment	3.28 (.80)	.87	.49*	3.5 (.79)	2.8 (.64)	31.73***
Meaning	2.90(.83)	.88	.70**	3.47 (.79)	2.45 (.68)	35.49***

* p < .05, ** p < .01, ***p < .001

^a F statistic for the univariate ANOVA comparing women in DESNOS+ group and DESNOS– group on each MTRR subscale

Table 7.

Study Two: Inter-correlations of Mean Scores across MTRR-99 Domains (N=164)

	1	2	3	4	5	6	7
1. Authority over Memory							
2. Integration of Memory & Affect	.68						
3. Affect Tolerance	.63	.50					
4. Symptom Mastery	.59	.46	.72				
5. Self Esteem	.58	.38	.76	.72			
6. Self Cohesion	.63	.44	.66	.54	.64		
7. Safe Attachment	.52	.42	.68	.69	.58	.50	
8. Meaning-Making	.62	.49	.68	.69	.67	.46	.58

For all correlations, $p < .001$.

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