

EXAMINATION OF THE PSYCHOMETRIC PROPERTIES OF AN INSTRUMENT
MEASURING TREATMENT FIDELITY OF OFFENDERS PARTICIPATING IN
MORAL RECONATION THERAPY

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North Dakota State University's regulations and meets the accepted
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ABSTRACT

The availability of quality treatment assessments for offender correctional programs in the United States is limited (Polaschek & Ross, 2010; Singh, Grann & Fazel, 2011). Therefore, a greater focus on the evaluation of assessment is needed to meet the criminogenic needs of offenders completing probation (Bourgon, Bonta, Rugge, Scott, & Yessine, 2010; Cullen & Gilbert, 2013). The researcher's objective in this quantitative study was to examine the psychometric properties of the Moral Reconciliation Therapy Group Member Evaluation (MRT GME), an instrument designed to measure the fidelity of Moral Reconciliation Therapy (MRT) treatment for offenders on probation. The validity, evidence, and findings were based on the analyses of a secondary data set using 227 scores of offenders who received MRT group therapy while participating in a federal probation pre-trial services treatment program in a Midwestern state.

The psychometric properties of a 26-item "receipt of MRT" treatment scale and scores from a 3-item "self-efficacy" instrument were tested. The "receipt of treatment" scale had an internal consistency reliability (alpha) of .96, and the 3-item scale of self-efficacy had an internal consistency reliability (alpha) of .57. There was evidence of construct validity of the sample scores by utilizing factor analysis. Analysis utilizing the Varimax rotation of the data identified four factors: assessment of self, positive relationships, current relationships, and positive identity. The results of the analysis indicated that the MRT GME and the Self-Efficacy scales correlated positively and explained 68.1% of the variance. Recommended changes to the instrument included adding and revising scale items and incorporating multicultural components into the scale.

Limitations of the research, implications, and recommendations for future research regarding fidelity of MRT and implementation of other offender treatment program suggestions regarding fidelity are discussed.

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CHAPTER I. INTRODUCTION

Overview of the Issue

In the last fifteen years researchers have identified the need for measuring the fidelity of treatment in correctional rehabilitation (Moncher & Printz, 1991; Moon & Shivy, 2008). The corrections literature emphasizes the critical need for the use of quality psychometric instruments to empirically assess treatment programs in research and practice (Andrews & Bonta, 2010; Bourgon, Gutierrez, & Ashton, 2011; McMurrin, 2009; Sinetti & Kratochwill, 2009; Taxman, 2006). In this study the researcher examined the psychometric properties of the Moral Reconciliation Therapy Group Member Evaluation (MRT GME), an assessment instrument developed for a previous study entitled “An Evaluation of the Treatment Fidelity of the Federal Probation and Pretrial Services’ Moral Reconciliation Therapy and the West River Camp” (Korcuska, Hulac, & Harper, 2011). The researcher analyzed the secondary data set to examine the factor structure, internal consistency, and reliability of 227 MRT GME scores. This analysis allows for further validation of the MRT GME as a measurement of Moral Reconciliation Therapy fidelity.

Moral Reconciliation Therapy

Moral Reconciliation Therapy is one of the most widely used correctional treatment programs in United States and international correctional agencies (Ferguson & Wormith, 2012). The goal of MRT treatment is to facilitate change in the offender’s thinking and behavior to reduce recidivism. Moral Reconciliation Therapy is a manualized cognitive-behavioral group therapy treatment program (Little & Robinson, 1988). Reconciliation is derived from the term “conation,” suggesting the facilitation of a conscious decision-making process leading towards a higher moral development (Little, 2002). The MRT model suggests that facilitators provide

interventions that promote a transformation to an increased cooperative personal agency moving through the moral stages, increasing participants' reasoning from a hedonistic, self-centered focus to a process of higher moral judgment (Reed, 2008). The individual's belief system is addressed in each step of MRT through program assignments designed to encourage changes in the individual's thought processes influencing their decisions (Little & Robinson, 1996).

The stages of MRT are described in the form of a "freedom ladder," which participants complete through steps in the program (Appendix A: Freedom Ladder, Little & Robinson, 1988). These levels include Disloyalty, Opposition, Uncertainty, Injury, Nonexistence, Danger, Emergency, Normal, and Grace. Individuals begin with a perspective of self-focus and introspection and progress sequentially through a series of stages toward higher ethical principles and life goals.

The MRT model treatment, or dosage, is completed when the participant presents their work in the group. The group facilitator responds to participants regarding their presentation with specific follow-up questions (Little, 2002). Each step is achieved with the consensus of the group participants and the facilitator. When one step is completed, the participant is allowed to begin work on the next step in the MRT workbook (Appendix B: MRT Step Checklist, Little & Robinson, 1988). The MRT exercises begin with fairly simple tasks and increase in complexity. Lower-level steps address honesty, trust, and acceptance; higher-level steps focus on healing damaged relationships and constructing goals outlined in the step checklist exercises of the MRT workbook (Little & Robinson, 1988).

The progression continues each week with assignments completed at the participant's individual pace. Participants may be demoted to a lower step if they fail to pass a step after a number of failed tries at their group presentation or if they demonstrate a behavior such as lying.

The MRT manual outlines basic treatment issues that may work towards the participant achieving higher moral reasoning. Offenders are believed to start at a hedonistic reasoning level (hedonistic) and move towards a concern for society's rules and for others. Little and Robinson (1988), indicate in their findings that an individual's moral reasoning increases as offenders' complete the MRT steps. Table 1 provides the seven basic treatment elements of MRT. The authors of the MRT approach indicate an increase in the individuals' moral reasoning skills with evidence of progress regarding these elements (Little & Robinson, 1988).

Table 1. MRT Seven Basic Treatment Issues

No	Treatment Elements
1.	Confrontation of beliefs, attitudes and behaviors
2.	Assessment of current relationships
3.	Reinforcement of positive behavior and habits
4.	Positive identity formation
5.	Enhancement of self-concept
6.	Decrease in hedonism and development of frustration tolerance
7.	Development of higher stages of moral reasoning

Theoretical Basis for MRT

MRT was developed in 1983 and implemented by Drs. Little and Robinson (2012) at the Federal Correctional Institute in Memphis, Tennessee. The MRT model is based on Kohlberg's theory of moral development (1976). Kohlberg describes a progression through three main stages: preconventional, conventional, and postconventional levels of moral reasoning. The preconventional level is often associated with children and may include adults who have not developed advanced moral reasoning. Individuals at the initial stage measure morality by its direct consequences and demonstrate an egocentric focus. The concentric level of moral development is common with adolescents and adults who measure morality with those that agree with the rules and norms of society regarding the individual's expectations and worldview. This

level of moral reasoning demonstrates a rigid focus on fairness and obedience. At the most mature schema, the postconventional level, an individual may hold different principles about what is right and wrong that may or may not be consistent with the rules of society. At this level of moral reasoning, an individual may recognize social structures, codes, rules, and norms as a social construction (Rest, Narvaez, Thoma, & Bebeau, 1999). One may give precedence to their own principles, at this level, regarding issues pertaining to human rights and social justice. Theorists suggest that many individuals never reach the third level of moral reasoning which is based on abstract moral reasoning (Gibbs, 2000; Kohlberg, 1976).

The postconventional level adheres to a deep moral reality of mutual love and respect for others (Gibbs, 2010). In the earlier stages of moral development, breaking the law may seem more acceptable, aligning with the philosophical framework of Kohlberg's (1976) and Gibbs' (2010) theories of moral development. According to Little and Robinson (1988), offenders often enter into treatment at low levels of moral development. Individuals may exhibit low moral development through strong narcissistic behaviors, low ego/identity strength, a poor self-concept, low self-esteem, difficulty delaying gratification, and strong defense mechanisms. These individuals may demonstrate a strong resistance to change with a low receptivity to treatment. The MRT model is intended to facilitate the advancement of the individual to a level of moral development in which the rules of society and a concern for others become important.

Moral Reconciliation Therapy was one of the first systematic programs designed to treat offenders from a purely cognitive-behavioral perspective (Little & Robinson, 1996). The MRT approach teaches participants to take responsibility for their actions instead of blaming external factors for their consequences. The use of cognitive restructuring activities may encourage the offender to reflect on their mistakes, history, and decisions as they develop new interpersonal

skills and life goals (Little & Robinson, 1988). MRT is conducted in a group setting with 3 to 15 participants which usually meets once or twice weekly with an MRT-trained facilitator. Each group begins with presentations within the group from the members working on the lowest program step and moves to the members presenting the higher steps. This allows group exposure to both beginning and advanced participants within each group and allows them to interact, challenging and supporting one another through group participation.

MRT GME: The South Dakota Study

The Moral Reconciliation Therapy Group Member Evaluation (MRT GME) was developed in 2010 by Korcuska, Hulac, and Harper (2011) when the Office of Federal Probation and Pretrial Services (FPPS) contracted with the University of South Dakota (USD) and with the Government Research Bureau (GRB). Its purpose was to provide researchers with an acceptable, reliable, valid, and objective tool that is easy to use to identify and quantify the fidelity of MRT. The research team was contracted to complete a study entitled “An Evaluation of the Treatment Fidelity of the Federal Probation and Pretrial Services’ Moral Reconciliation Therapy and the West River Camp” to examine the fidelity of implementation of an offender’s treatment program using the Moral Reconciliation Therapy model. This researcher worked with two USD faculty members to explore the level of adherence, or fidelity, of the MRT model. Once the research team discovered that no assessments for this treatment model existed in the literature, the decision was made by the team to develop a scale to measure the participants’ perceptions regarding receipt of MRT and their level of self-efficacy related to reaching their goals and staying out of prison. The reason for the current study was to assess the MRT GME regarding its psychometric properties with offenders’ self-perception of their MRT treatment and level of self-efficacy to stay out of prison.

Development of the Moral Reconciliation Therapy Group Member Evaluation (MRT GME)

The research team's first step in creating the MRT GME was to integrate five of the seven specific elements outlined in Little and Robinson's treatment model (Little & Robinson, 1988). Table 2 includes these seven original MRT elements and indicates the specific items developed by the team to match each element from the model. The last two elements were not included in the instrument due to the higher developmental levels of functioning they address. With the relatively short amount of time in which the individuals work in an MRT group, the elements that were more likely to be addressed during the participants' time in the MRT program were included. A complete copy of the MRT GME instrument is provided in Appendix C of this document.

In the South Dakota study, the MRT groups met weekly in community and reservation centers, with meetings lasting approximately one to two hours with 3 to 15 group members per meeting. Groups were facilitated with certified MRT group leaders who had completed the 32-hour training in the MRT method. Clients worked at their own pace to complete steps 1 through 12 in the MRT workbook. The use of the MRT GME instrument was utilized to gather data on 227 assessments of an offender sample. Table 2 below provides the items that were theoretically driven from the literature, the MRT model, and Bandura's (1977) social learning theory (Little & Robinson, 1988).

Questions that were paired with the five elements of MRT are listed below in Table 2, Element 1 ("confrontation and assessment of self") contains the most items, six (questions 1, 2, 4, 10, 15, and 16 of the MRT GME).

Table 2. MRT Seven Basic Treatment Issues

No	Elements	GME Items
1.	Confrontation and assessment of self (beliefs, attitudes, behavior, and defense mechanisms)	1, 2, 4, 10, 15, & 16
2.	Assessment of current relationships	3, 9, & 14
3.	Reinforcement of positive relationships and habits designed to raise awareness and moral responsibility	20, 21, & 22
4.	Facilitation of positive identity formation through exploration of the inner self and goals	8, 24, & 26
5.	Enhancement of self-concept through ego-enhancing activities	18, 19, & 23
6.	Decrease in hedonistic orientation of clients through development of delay-of-gratification expectations	Not included
7.	Development of higher stages of moral reasoning	Not included

The second step in building the MRT GME scale was to develop a second assessment, the researchers identified this scale as the Self-efficacy Scale. Table 3 provides the items that address participants' beliefs, or their self-perceptions, regarding their ability to avoid the urge to get into trouble by reoffending (item 26: "right now, I could resist the urge to get into trouble"). The MRT GME was a theoretically driven fidelity scale which allowed the team to consider the important aspects of the offenders' motivation to engage in MRT treatment and their openness to receive treatment. The second question on the Self-efficacy Scale ("I have the ability to meet my goals") addressed the respondents' confidence and attribution to self, regarding their ability to impact their situation. The third question on the scale ("I am responsible for the trouble I'm in") represents a higher moral development stage of taking responsibility for their actions. According to Bandura's (1977) social cognitive theory, the level of an individual's attitudes, abilities, and cognitive skills, including their ability to trust themselves, is recognized as the "self-system." This self-system impacts how one perceives situations (e.g. receives MRT treatment) and affects the individual's choice of actions. Self-efficacy is the individual's level of belief that they are capable of succeeding in a given situation due to their own actions. Self-efficacy may impact

one's psychological state, behavior, and motivation to change. The researchers based the questions for this instrument on these principles of Bandura's social cognitive learning theory. Key elements in the literature may determine if the offender will engage in treatment and make necessary changes to successfully complete their probation sentence (Korcuska, Hulac, & Harper, 2011). Table 3 includes a description of the Self-Efficacy Scale including a 0 through 4 Likert scale response.

Table 3. MRT GME Self-Efficacy Scale

Items

-
1. Right now, I could resist the urge to get into trouble.
 2. I have the ability to meet my goals.
 3. I am responsible for the trouble I am in.
-

Note: Items 1, 2, 3 are labeled as 26, 27, and 28 in the original questionnaire.

Likert Scale

The research team designed the MRT GME on a Likert scale. The Likert scale is one of the most widely used scales for measuring opinion, preference, and attitude (Leung, 2010; Stanger, 2011). Leung (2010) studied the differences among 4, 5, 6, and 11-point Likert scales and found no significant differences regarding the internal structure of the means, standard deviations, item-item correlations, item-total correlations, Cronbach's alpha, and factor loadings. Results from predictive validity were inconclusive. Leung (2010) stated that a five-point Likert scale allows the highest eigenvalue for the first and second factors and the highest cumulative percentages of variations. Garland (1991) suggests that a social desirability bias may be reduced by excluding the use of a middle or neutral point in a scale, and retaining it might distort the results. A middle neutral point was not used in the MRT GME instrument.

Reliability Measures

The scale items on the MRT GME are based on a third-grade reading level using the Flesch-Kincaid Index (Kincaid, Fishburne, Rogers, & Chissom, 1975). Readability measures are often used to measure test comprehensibility when developing the text of an instrument. The formula for the Flesch-Kincaid Index was developed by Rudolph Flesch and John P. Kincaid (Crossley, Allen, & McNamara, 2011). The Flesch-Kincaid Index was developed for use in the Navy, and is currently utilized in developing text for educational purposes. Test developers often strive to simplify the text using a structural or an intuitive approach. The Flesch-Kincaid Index uses a structural approach that incorporates word lists at the level found at different grade levels. The readability formula is based on three language elements: number of words in the sentence, number of affixes, and number of references to people (Flesch, 1948). The research team developed text at a third-grade level for the MRT GME considering the appropriate level by individuals on probation.

Need for Current Study

The findings of the first study utilizing the MRT GME instrument indicated a four-factor scale on a .05 level. Based on these findings, the researchers determined that the factors on the MRT GME were distinct and significant enough to be included on the instrument. However, more testing was needed to test the MRT GME before the instrument can be widely utilized. The factors need to be analyzed further and the scores rotated to add a deeper understanding of the factor structure and psychometric properties of the instrument. This current study is necessary to provide further validation and development of the MRT GME as an assessment for MRT programs and other offender treatment models.

Definition of Terms

The following terms are defined for the purposes of this study:

Evidence-Based Practice. The integration of clinical expertise, value, quality, and relevance using empirically-based methodology (Dozois, 2013).

Factor Structure. The correlational relationship of variables that are determined to measure a construct (Kline, 1993).

Federal Probation and Pretrial Services (FPPS). This federal system is a function of the United States district courts and carries out probation and pretrial service functions in the U.S. (www.uscourts.gov/Home.aspx).

Fidelity. The ability to replicate treatment program as intended regarding design, training, delivery, receipt, and enactment of the framework of the treatment model (Moncher & Prinz, 1991).

Government Research Bureau (GRB). This organization advises state and private agencies to conduct policy research. It offers research and training opportunities to students in public service.

Moral Reconciliation Therapy (MRT). A cognitive behavior treatment protocol designed for use with correctional and at-risk populations (Little & Robinson, 1986).

Moral Judgment. An understanding of moral decisions or values of right, wrong, and caring regarding morality (Gibbs, 2010).

Motivation. Factors within an individual that arouse and direct goal-oriented behavior.

Offender. One who has been convicted of a criminal offense (Administrative Office of the United States Courts [AO], 2014).

Probation. A sentencing option by the court to monitor an offender who is required to abide by certain conditions instead of serving time in prison (Administrative Office of the United States Courts [AO], 2014).

Receipt of Treatment. The accuracy of the client's comprehension and demonstration of treatment (Lichstein, Riedel, and Grieve, 1994).

Recidivism. A tendency toward relapse into criminal behavior leading to repeated arrests and re-imprisonment, often used to measure the success of a specific institutional program (uslegaldefinitions.uslegal.com).

Self-efficacy. Self-referent judgment that mediates the relationship between thoughts and action (Bandura, 1986).

Purpose of the Current Study

The purpose of this study was to examine the factor structure of the MRT GME to better understand the psychometric properties of the instrument. The instrument was developed to measure the fidelity of offenders' perception of their receipt of MRT treatment and level of self-efficacy. The MRT GME was not analyzed, however, regarding the statistical procedures outlined in this study. Analysis of the data may impact the development of the effectiveness and quality of the MRT GME instrument for possible use in future studies.

Delimitations

First, of the five criteria regarding fidelity of treatment (Moncher & Prinz, 1991), this study focused primarily on one major criterion: the perception of offenders' receipt of treatment (the level to which respondents perceived that they received and engaged in treatment). Other aspects of treatment fidelity may be examined in future studies. Second, survey response, as used in this study, may narrow response categories as participants are limited to the text in the items.

Third, the MRT approach uses an open group format with new members entering the group at different times. This resulted in some respondents having completed only one MRT session when completing the instrument for this study. Finally, data was collected over a one year period, this amount of time may limit the stability of scores. Data collected over a longer period with a larger sample may add to the reliability of the findings.

Summary

In the following chapters, the author presents the specific aspects of this study designed to assess a newly developed assessment instrument. Chapter 2 provides an overview of current literature related to offender treatment programs, theoretical foundations, and the efficacy of current assessments of treatment programs. In Chapter 3 the author outlines the details of the study's design and methodology. A description of the analyses is provided. An objective instrument created by the author's research team was used to measure the fidelity of a psychometric instrument in a previous study with offenders receiving Moral Reconciliation Therapy. In addition to the format of this instrument, the reliability and validity of scores and specific statistical analyses addressing the psychometric properties of the MRT GME instrument are discussed.

CHAPTER II. LITERATURE REVIEW

Current Offender Treatment Program Assessments

There is agreement in the literature of a crucial need for quality instruments that assess the fidelity of treatment provided for offenders (Bourgon, Bonta, Ruge, Scott, & Yessine, 2010; Cullen & Gilbert, 2013). A range of instruments is needed to establish fidelity in measurement tools psychometrically tested for their use in research studies (Sinetti & Kratochwill, 2009). Best practices in treatment fidelity require appropriate assessment (Bellg et al., 2004; Walters, 1995). Moncher and Prinz (1991) introduced the use of strategies including five components of treatment fidelity: design, training, delivery, receipt, and enactment of the framework of the treatment model (Moon & Shivy, 2008). Treatment fidelity is the ability to replicate the treatment program according to the elements with which the model was designed. Fidelity of a treatment program includes a clear understanding of the model, psychometric properties of the instrument that assess all of the elements of the treatment approach, delivery of the treatment by the facilitator, and a client who comprehends the treatment and is open to receiving the treatment. Treatment programs are needed that are relevant to the needs of the offender population (Lipsey, 2006; Listwan, Cullen, & Latessa, 2006; McGuire, 2001; Nebelkopf & Phillips, 2004; Olver, Sockdale, & Wormith, 2011; Ostermann, 2013; Polaschek, Anstiss, & Wilson, 2010; Serin, Lloyd, & Hanby, 2010; Taxman, 2008), and assessment of the fidelity of the programs is crucial to establishing their effectiveness.

In a review of the National Institute of Health Behavioral Change Consortium, an advisory committee addressed strategies for assessing, monitoring, and improving treatment fidelity in the five areas outlined by Moncher and Prinz (1991) promoting the fidelity assessment and plan for implementation (Bellg et al., 2004; Borrelli, 2011). The work group at the BCC

reviewed treatment fidelity practices found in the literature, identified techniques for implanting fidelity into treatment practice, and developed a framework for incorporating these practices consistently (Bellg et al., 2004). Teague, Mueser, and Rapp (2012) presented four fidelity measures for community programs working with individuals with mental illness: *Cognitive Therapy for Psychosis Adherence Scale*, *Strengths Model Fidelity Scale*, *Illness Management and Recovery Program Fidelity Scale*, and *Tool for Measurement of ACT*. These authors identified the importance for these measures to 1) include satisfactory psychometric properties, 2) assess interventions on critical elements, 3) be related to outcomes, and 4) be used for training, quality improvement, or certification.

A highly publicized article published by Elkin, Parloff, Hadley, and Autry (1985) focused on the aspect of the treatment manual, training and monitoring the therapist in the interest of assessing treatment fidelity (Lichstein, Riedel, & Grieve, 1994). Emphasis also was shifted from inquiry of methodological and design issues to a focus on examining the conduct of the therapist and the client to determine if the treatment was explored as intended. The assessment process was examined at a molecular level by observing the treatment from the time of administration of the given dose to its utilization by the client. Kazdin (1980) addressed fidelity in a chapter of his monograph regarding methodology, design, and evaluation in psychotherapy research to the delivery and receipt of treatment focusing on the possibility of threat to internal validity.

Most programs currently fail to consider the significant impact of participants' receptivity to treatment and do not utilize assessments to measure the fidelity of treatment programs. Treatment fidelity addresses the methodological strategies that are implemented into treatment programs and assessments to incorporate reliability and validity into interventions. Regarding

appropriate treatment opportunities for offenders, few instruments are currently available to assess these programs to determine their effectiveness.

Developments in the area of assessment of offenders are reported in the current literature addressing criminology which continues to be an evolving process (Steptoe, Lindsay, Murphy, & Young, 2008). These authors address the development of risk assessment as largely associated with the change from clinically subjective risk assessment to data-driven assessments. Reports indicate that a number of dynamic factors associated with offender behaviors and beliefs may be combined to formulate a dynamic risk assessment. Research findings including a study specifically focused on offenders identified with intellectual disabilities demonstrating the utility of assessment for predicting future incidents and treatment progress (Lindsay, Hastings, Griffiths, & Hayes, 2007).

Multiple factors identified were related to effective treatment for offenders, including cognitive restructuring interventions in a group setting, moral judgment development, client treatment matching, consideration of capabilities including learning style and intelligence, and sensitivity to the cultural values and beliefs of the participants (Little, Robinson, & Burnette, 1991; Nebelkopf & Phillips, 2004; Taxman, 2006). These authors suggest that implementation of these components into recovery may increase the offender's ability to work toward change and to respond to treatment. Little and Robinson (1988) suggest that MRT is a treatment developed especially for the "treatment resistant" population of offenders and is used with the prison population, jails, mental health centers, and with adolescents who are working toward moral development. Few programs, however, have implemented these aspects into their treatment programs, and few have been assessed for their effectiveness.

Motivational Interviewing

Motivational Interviewing (MI) is an example of an evidence-based program commonly used with substance abuse treatment programs with offenders (Clark, 2006; Miller & Rollnick, 2002). Interest in clients' motivation to change inspired motivational interviewing as a new development within the addictions field to work with resistant clients demonstrating difficulty engaging in treatment (Austin, Williams, & Kilgour, 2011). In the late 1970s a paradigm shift followed research that indicated that client motivational factors were largely impacted by variables from the therapist in predicting client motivation and treatment outcome (Austin, Williams, & Kilgour, 2011; McMurrin, 2009). Prior to these findings, lack of motivation to engage in treatment was often considered a personality trait; however, it was later re-conceptualized as an interpersonal process (Miller, 1985). Miller and Rollnick (2002) present a spirit of collaboration between the client and therapist to work together in a partnership to encourage the client to provide expertise and solutions in treatment. The client experiences autonomy, in MI, with the expectation to initiate change and generate motivation to actively work toward their goals (Austin, Williams, & Kilgour, 2011).

One of the principles of MI is addressing the offenders' intrinsic motivation required to make changes in their belief system, which leads to changes in their behavior. McMurrin (2009) suggests that MI may lead to improved retention in offender treatment, enhanced motivation to change, and ultimately to reduced offending. Motivational interviewing is based on four principles: 1) Developing discrepancy: creating and amplifying discrepancies between the client's behavior and their goals and values, 2) Rolling with resistance: it is not productive for the therapist to respond to client resistance with resistance, 3) Expressing empathy: a Rogerian (1959) condition towards therapeutic change, and 4) Supporting self-efficacy: addressing the

client's belief in their ability to effect change toward their goals by their actions (Austin, Williams, & Kilgour, 2011). McMurrin (2009) addresses the need for treatment fidelity testing of MI application with this population. More outcome research is needed to examine the specific details related to MI and the response of the offender in treatment.

Self-Efficacy

Bandura's (1986) social-cognitive theory of self-efficacy construct in the MRT GME emphasized the belief in one's capability to succeed, which may lead to the individual's success. Bandura guided the development of the Multidimensional Scales of Perceived Self-Efficacy (Bandura, 1989) to measure student self-efficacy. Self-efficacy is a construct often studied in educational settings.

Correctional Rehabilitation Program Assessments

One of the most popular self-rated offender measures, the Buss-Perry Aggression Questionnaire (BPAQ), is considered the gold standard for measuring aggression, which includes four subscales: physical, verbal, anger, and hostility (Cohn, Seibert, & Zeicher, 2009). The BPAQ is used worldwide with offenders and with non-correctional populations. The Client Assessment Inventory (CAI) is a self-report instrument for measuring client change and progress in treatment in therapeutic communities (TC) and non-correctional treatment settings (Sacks, McKendrick, & Kressel, 2007). The CAI is designed to measure progress in treatment and to be used as a clinical tool to enhance client problem recognition. This tool is used to track offender performance during treatment. Attempts to validate these instruments are ongoing.

Another example is the National Institute of Corrections' (NIC) cognitive-behavioral program: Thinking for a Change (Bush, Glick, & Taymans, 1997). A program used nationwide, it is intended for adult offenders and uses a manual outlining each of the 22 sessions. The

sessions include didactic instruction, role-play, and homework assignments. The program is intended to identify and change the offender's deficient interpersonal problem-solving, thinking, and reasoning skills.

A meta-analytic review of treatment effects for correctional programs supports structured, group-oriented cognitive behavioral programs (CBT) for offenders intended to reduce recidivism (Andrews et al. 1990; Belg et al. 2004; Golden, Gatchel, & Cahill, 2006; Landenberger & Lipsey, 2005; Little & Robinson, 1988, 1989, 2006, 2009; Lowenkamp et al., 2009; McMurrin & Ward, 2010; Miller, 2006; Wilson et al., 2005). Group sessions are considered the typical format for offender treatment programs.

Moral Reconciliation Therapy

The National Registry of Evidence-Based Programs and Practices (2008) estimates that there are over one million individuals who have participated in MRT treatment programs. Though it has been accepted as a valid treatment intervention, the theoretical and empirical support has been minimal, mostly by the developers of the model, and lacks the evidence that supports offenders' receptivity to the model (Ferguson & Wormith, 2012).

A major component of MRT is offenders identifying their criminal thinking and behavior toward self-reflection and self-awareness, finding their own part in the consequences experienced through structured activities. MRT also integrates a number of theoretical constructs relating to Bandura's (1977) social cognitive theory regarding self-efficacy, which suggests that individuals with strong feelings of self-achievement or efficacy for completing tasks will work harder, participate more readily, and remain engaged in completing a task longer than those with a low level of self-efficacy.

The MRT model encourages offenders to take responsibility for their actions. Moral Reconciliation Therapy was one of the first systematic treatments designed to treat offenders experiencing substance abuse from a purely cognitive-behavioral perspective, and later was believed to be effective with treating anti-social behavior (Little & Robinson, 1996). These authors suggest that as participants move through the stages of the MRT program, their moral reasoning, cognitive structures, and decision-making skills progress.

MRT Literature

The appropriateness of the MRT model is supported by a meta-analysis of cognitive behavior treatment-based programs (Andrews et al., 1990). The details of treatment delivery and receipt, regarding differences such as cognitive ability, learning style, ethnicity, and gender, remains unclear. Little, Robinson, Burnette, and Swan (2010) suggest that MRT may be an effective program for individuals working to reduce stress, anger, violent behavior, and excessive use of alcohol. The articles published by the MRT developers, however, were not all found in peer-reviewed journals (Ferguson & Wormith, 2012). A computerized search of the databases provided a limited number of studies addressing the fidelity of MRT. Most of the studies identified recidivism rates to address the level of effectiveness of MRT treatment with adult offenders (Anderson, 2002; Burnett, 1997; Burnette, Prachnick, Leonard, Robinson, & Swan, 2005; Godwin, Stone, & Hambrook, 1995; Little & Robinson, 1989; Little, Robinson, & Burnette, 1990; Shields, 2003).

A meta-analytic investigation by Ferguson and Wormith (2012) including 30,259 adult and juvenile offenders indicated a modest effect regarding recidivism rates. The MRT findings indicated a higher success rate with adults than with juvenile offenders in institutional settings, compared to those receiving MRT in the community. The benefits of MRT outcomes were

strongest with a short follow-up period of less than two years and with small samples. Little, Robinson, Burnette, and Swan's (2010) study showed long-term effects sustained over 21 years. Lipsey and Cullen (2007) conducted a meta-analysis of 31 offender treatment programs. These authors found significant differences in the delivery and the receipt of MRT between settings by different MRT providers. Ferguson and Wormith (2012) suggest that differences in findings may be indicative of evaluation methodology.

The research team completed an evaluation regarding the Federal Probation and Pre-trial Service MRT program in South Dakota (Anderson, Feimer, & McKeown, 2009). Participants who completed MRT were described in the literature findings as more likely to have lower recidivism outcomes than those who did not participate in MRT programs. However, when specific factors such as age, race, gender, and risk scores were controlled, there was not a significant difference in decreasing probation violations. Determining the level of fidelity of MRT facilitation by providers was the focus of the study regarding the delivery and receipt of MRT treatment for offenders on probation.

Summary

There are few studies in the literature that assess the fidelity of treatment programs for offenders. The most empirically recognized treatments are the cognitive-behaviorally oriented treatment programs, which are typically conducted in a group format. One of the most widely accepted treatment programs in the correctional community is the Moral Reconciliation Therapy treatment program. While there is some evidence of the use of assessments to determine the efficacy of treatment programs, a gap exists. The majority of assessments lack sufficient statistical analyses of the variables. Therefore, the purpose of this study is to examine the factor structure and psychometric properties of the MRT GME assessment.

CHAPTER III. METHODS

This chapter includes a description of the methodology that was used to complete this study. The sample design, study measures, data collection processes, data analysis and evidence regarding the reliability of scores are included. The researcher chose to use a quantitative research design with Cronbach's alpha, exploratory factor analysis, and a Varimax rotation of the variables to examine the factor structure of the MRT GME instrument. Cronbach's (1951) alpha is a measure of internal consistency considered by Kline (1994) as the best index of the reliability of an instrument. Gorsuch (1983) asserts that factor analysis is often used in the methods of determining the representatives for theoretical constructs. The explication of constructs among variables was initially constructed from theory in this study. Testing the constructs of a new instrument using factor analysis is an important aspect of gaining an understanding of the statistical structure of the psychometric properties, including validity aspects of an instrument (Nunnally, 1978). The Varimax method has been considered the preferred method of rotating data (Nunnally, 1978) and will be used in this study.

Purpose of the Study

The MRT GME instrument is approached as two instruments for the purpose of this study. The researchers administered the MRT assessment to participants completing a federal probation sentence, and gathered the data for a previous study. The scores used in this study are a secondary data set. The first instrument discussed, the MRT GME, is newly developed and untested. The factor structure of the MRT GME is uncertain. The MRT GME was designed using a rational approach (Little & Robinson, 1996) based upon MRT principles and treatment guidelines (Little & Robinson, 1988). Items on the MRT GME (26 items) were included in the scale if they were a significant addition to the constructs identified by the statistical analyses and

the current factor structure. Second, a self-efficacy instrument composed of three items was also administered as part of the MRT GME and is included in this study. Therefore, the purposes of this study were to 1) examine the factor structure of the MRT GME and the Self-efficacy Scale scores, 2) explore group participants' receipt of MRT treatment using MRT GME and self-efficacy scale factor scores, and 3) identify the characteristics of the relationship between the MRT GME factor scores and the self-efficacy factor scores. 4) Descriptive statistical analyses were completed. Finally, 5) the subscale inter-correlations suggesting the distinct dimensions and the subscale independence were examined. Relationships between the subscales and the underlying dimensions that were not addressed in the previous study were explored.

Research Questions

1. What are the relationships between the MRT GME items and the identified constructs?
2. What is the internal factor structure of the MRT GME?
3. Do the receipt of treatment factors correlate with self-efficacy?
4. Do the MRT GME scores measure the stated underlying constructs "receipt of MRT treatment" and "self-efficacy"?

Hypotheses

1. There is a relationship between the MRT GME items and the identified constructs operationally defined as "receipt of MRT treatment" and "self-efficacy."
2. There is a nondirectional relationship between scores pertaining to the receipt of MRT treatment and self-efficacy scores.

This study explored the MRT GME factors of the self-report instrument by the participants completing a federal probation sentence. The correlation between constructs was

explored. This newly developed instrument is untested and therefore the results should be interpreted with caution.

This study provides results from the examination of the factor structure of the MRT GME scores. The 26 items on the MRT GME instrument addressed the receipt component of treatment fidelity of Moral Reconciliation Therapy. The three items representing the second scale are theoretically based on the self-efficacy construct and are intended to measure offenders' belief in their ability to stay out of trouble and successfully meet their goals. One goal of this study is to examine the relationship of the receipt of MRT treatment with offenders' perceptions of their level of self-efficacy. This chapter reviews the factors related to the instrument.

Participants

A secondary data set was used for this study. As described in chapter one, a sample of adult male and female offenders completing a federal probation sentence and participating in Moral Reconciliation therapy completed 227 MRT GME assessments. Data was gathered after the MRT group sessions, in a Midwestern state in the United States. The participants represented a racially, economically, and academically diverse group of individuals without the collection of specific demographic information to protect the confidentiality of the participants. The participants' scores came from individuals who had a variety of backgrounds and were on probation for a range of levels and of offenses.

Instrumentation

The Moral Reconciliation Therapy Group Member Evaluation (MRT GME) is a self-report rating scale of 20 items utilizing a 5-point Likert scale (0-4) format. This instrument was designed to measure the receipt of MRT treatment and the self-efficacy levels of offenders' perceptions of their receipt of MRT treatment. The 29 items are the sum of two independent subscales, with

items 1-26 representing MRT constructs and items 27-29 representing their level of self-efficacy and their perception of confidence in their ability to move through their probation sentence successfully without reoffending.

The MRT GME (Korcuska, Hulac, & Harper, 2011) is measured as two separate scales, 1) a 26-item self-report scale and 2) a 3-item responsibility, self-efficacy measure. This instrument was developed for a previous study. The items were based on the MRT literature.

Previous research has identified a four-factor solution to the combined MRT GME and self-efficacy scales. The original MRT GME instrument, which included the self-efficacy scale, was developed in 2010 by a research team using the MRT manual, facilitator training, and MRT principles from the literature. The instrument consists of items intended to measure the participants' perceptions regarding their receipt of MRT treatment. The MRT GME instrument assessed participants' perceived personal changes associated with the receipt of MRT treatment and a brief responsibility-confidence scale. Questions developed for the MRT GME instrument are based on five of the seven elements of the MRT model. The scale items are based on a third-grade reading level using the Flesch-Kinkaid Index (Kinkaid, Fishburne, & Rogers, 1975).

This researcher analyzed the instrument using preliminary factor analysis, Cronbach's alpha, and principal components factor analysis with a Varimax rotation. Further analyses of the constructs addressing the reliability and validity of scores and an examination of the factor structure of the instrument were completed. Additionally, the author examined the constructs regarding reliability and validity of scores. The reason for this study was to understand the psychometric properties of the MRT GME.

Statistical Analysis

Specifically, the following aspects of the statistical analyses were completed utilizing the data gathered using the MRT GME. In the analyses the following measures were employed: 1) the purpose for the analyses of a psychometric scale is to measure its internal consistency by examining the items to measure which items are highly intercorrelated (DeVellis, 2012). Internal consistency reliability analyses assesses the reliability of the instrument by estimating how well the items reflect the same construct (Trochim & Donnelly, 2008). Correlations account for items sharing an underlying cause. It is unlikely that one item is causing another. High inter-item correlations may indicate that items that are included in the scale are identifying the same construct. The analyses of the correlation between the receipt of MRT treatment and the self-efficacy item scores provide the level of significance of each item on the MRT GME. Multiple dimensional scales measure more than one phenomenon with each dimension containing a subscale (Wallston, Wallston, & DeVellis, 1978).

Construct Validity

Construct validity is used to indicate the extent to which a particular measure relates to other variables consistent with theoretically derived hypotheses regarding the concepts, or constructs, that are being measured (Carmines & Zeller, 1979; Cronbach, & Meehl, 1955; DeVellis, 2012; Fowler, 2014). This form of hypothesis is based on interpretation of the scores (Kane, 2007). For this study the hypotheses are: 1) There is a relationship between the MRT GME items and the identified constructs operationally defined as “receipt of MRT treatment,” and 2) There is a relationship between scores pertaining to the receipt of MRT treatment and self-efficacy scores. Construct validity is not based on one prediction or finding and requires a number of consistent findings across a number of different studies (Carmines & Zeller, 1979;

Cronbach, 1971). Therefore, it is the author's intention to engage in follow-up research following this initial study. Validity is a construct regarding the extent to which the instrument measures the underlying constructs that it is intended to measure and is the property of the meaning of the assessment scores, not the test (Cronbach, 1971). Analyses of the two scales will assess the meaning derived from the scores, the interpretation of scores, and the use of the instrument.

Statistical Methods

Exploring the factor structure is a fundamental element in the evaluation of instrument measurement and was conducted in this study. In the development of the MRT GME it was important to address the validity and reliability of the scores. Factor analysis was completed to provide evidence of the convergent and discriminant validity of the instrument.

Principal Components and Factor Analysis with a Varimax Rotation of the Data

The purpose of the factor analysis was to provide an empirical test of the theoretically identified factor structure of the MRT GME. Variables would be removed from the analyses, discarded on the basis of the theoretical and statistical levels described by Cronbach's alpha if they fell into a specific range. Each item was deemed theoretically appropriate or inappropriate for the MRT assessment based on the inclusion criteria. Each construct is defined with a number of observed indicators using principal components analyses and factor analysis. The next focus was to explore the sample data closely, as it corresponded to participants' receptivity to treatment and levels of self-efficacy. The model was based on an exploratory approach (Byrne, 2001). Once the empirically derived factor structure was obtained, the factor structure scores were validated with the data. It was estimated that there would be four factors identified in the analyses. The bivariate correlation matrix was inspected for correlations greater than or equal to .30, as guidelines suggest that a moderate portion of the correlations of the estimates fall into this

range (Hair et al., 1995). Prior to the final analysis of the scores, the quality of the correlation matrix was conducted.

The researcher completed a Varimax rotation of the data to extract the factors and explore the different possibilities of distributions. After a preliminary analysis identifying the factors, this author completed the preliminary analyses, the percentage of variance was explained, and the communalities, eigenvalues and the factor loadings were examined. The analysis was used to integrate the assessment of receptivity to treatment, levels of self-efficacy, and the identification of dynamic variables were retained. Finally, the subscale inter-correlations suggesting distinct dimensions and subscale independence are provided.

Reliability

Reliability is an essential element to consider in the development of a measurement scale and to addresses the extent to which a test or instrument yields the same results consistently on repeated trials (Carmines & Zeller, 1979). The reliability of an instrument is closely associated with its validity. The alpha coefficient is the most identified index of reliability available regarding internal consistency (Kline, 1993). The reliability of an instrument does not depend on its validity. The reliability analysis uses a coefficient alpha of the different aspects of the instrument and a test of the total instrument. The reliability analysis is a statistical analysis conducted to determine if individuals are responding consistently across items (Carmines and Zeller, 1979; Kline, 1993).

Cronbach's Alpha

Cronbach's coefficient alpha (Cronbach, 1951) is one of the most widely used objective measures of reliability. Multiple items of constructs are examined to measure internal consistency (Streiner, 2003). Cronbach's alpha was originally developed by Kuder and Richardson (1937) for

dichotomously scored items using a zero or a one. Alpha was developed to measure internal consistency test or scale scores. Later Cronbach (1951) added the component to include additional variables that account for a scoring method. Internal consistency is the extent to which items within an instrument measure the same concept or construct and the level at which the constructs inter-relate within the test (Tavakol & Dennick, 2011). Cronbach's alpha calculates the values of the alpha coefficients calculated from the inter-item correlations that are obtained for all of the combinations of items. Kline (1999) asserts that an acceptable level of Cronbach's alpha pertaining to psychological constructs is .70. Cronbach (1971) describes this procedure as an interpretation of data from completing a specific procedure. The procedure completed in this study to measure the MRT GME utilized the Statistical Package for the Social Sciences 22 (SPSS 22) program to assess the internal consistency of the scores. Examining the alpha in detail measures the reliability of the scores. The results of the total score as well as the theoretically identified subscales will be presented in the findings. Cronbach's alpha internal consistency reliability coefficients were assessed for factored subscales of the MRT GME to determine if the scale measured the intended constructs consistently.

Internal Consistency

An important aspect of internal consistency considered in this study is homogeneity of the items. In item analysis, a group of items is administered to a sample of a population. Each item is correlated with the total score (Kline, 1993). The aim of analysis is to produce a homogeneous instrument reflecting the underlying constructs the researchers intend to measure. When test items are uniform in the constructs they address, the composition of the instrument indicates that the items may be measuring what the test was developed to measure. To measure the homogeneity of items, Cronbach's alpha is used to examine the level at which the items

cluster together indicating how each item impacts the total score if deleted. This allows the researcher to make decisions regarding which items to include in the scale and which items to delete. One goal of instrument development is to reduce the number of items to the fewest number of items that will address each concept parsimoniously. The connection between Cronbach's alpha and internal consistency is suggested to be evident by the level at which the number of items measure a construct. If the items are measuring the same construct, the analysis should indicate that they are correlated with one another. As the correlation between the items increases, the alpha also increases. This coefficient is referred to as the internal consistency reliability of an instrument.

There are specific possible results associated with the Cronbach alpha analysis. Specific variables will alter the level of alpha which may impact the interpretability of the scores. One variable that may impact the alpha coefficient is the number of items in the instrument. Alpha is dependent on the magnitude of the correlation between the items. Therefore, if two constructs are combined into one instrument, the increased number of items may inflate the homogeneity of the scale even though the correlation between the items did not change. The alpha may remain high even though the scale may be measuring two distinct constructs (Kline, 1993).

In the interest of a more complete understanding of the internal consistency of an instrument, it is important to go beyond determining the Cronbach's alpha coefficient. A test for measuring homogeneity of the items provides additional analysis of the level of internal consistency of a sample. If items are too similar to one another, a high alpha may reflect redundancy in the items. A multidimensional test provides a broad perspective for analyzing and interpreting the data (Kline, 1993). Therefore, this researcher utilized factor analysis to determine the number of factors that make up the MRT GME.

Internal consistency is a necessary but not sufficient condition for measuring the homogeneity of the sample of test items. The Cronbach's alpha analysis procedure identifies homogeneity, though this does not ensure that the items measure one specific construct. A multidimensional test does not necessarily lower the alpha of the test. Alpha can be used to determine if there is unidimensionality in an assessment. A larger number of items will increase the value of alpha if the calculation for a standardized item measurement of alpha is at a high level in the measurement. If items present low alpha due to poor correlation between items, they will be revised or discarded. One way to identify the items that do not correlate with the other constructs is to compute the correlation of each item with the total score; test items with low correlations (scores close to zero) are deleted. High scores of test items may indicate redundancy, indicating they are testing the same concept that may slightly resemble other items. A maximum value of .70 is a common minimum score required for inclusion in the assessment for a newly developed instrument (Kline, 1999; Nunally & Bernstein, 1994). However, using a .80 maximum value requires an even greater level of distinction for inclusion of items into the measurement scale. This level may indicate that the instrument has homogenous items with an optimally heterogeneous population, which may indicate strong internal consistency of the instrument. For inclusion in the instrument, two criteria are met: 1) the p value (the proportion that indicates whether the item is strong enough to be included in the measure) and 2) the correlation of the item with the total score (Kline, 1993). The p value level for this analysis is between .20 and .80 for an item to be considered distinct enough to be included in the MRT GME.

Cronbach (1971) describes this procedure as an interpretation of data from completing a specific procedure. The procedure completed in this study to measure the MRT GME will be the SPSS 22 system to assess the internal consistency of the scores. Examining the alpha in detail

measures the reliability. The results of the total score as well as the theoretically identified subscales are presented in the findings. Cronbach's alpha internal consistency reliability coefficients were completed regarding items from the factor analysis. Decisions regarding the level at which items are considered for significant loading on a given factor are provided. Hatcher (1994) considers loadings equal to or greater than .40 as meaningful for use in the scale. Scores below .40 are not considered. This study determined the .50 value as a minimum required level to be included in the scale to differentiate between the subscales.

Data Analysis with an Orthogonal Rotation

Psychometric analyses of the MRT GME instrument included (1) factor analysis of the dynamic items to identify constructs regarding receptivity to treatment, response to treatment, and self-efficacy, (2) descriptive statistics and comparison between eliminated items, and (3) measurements of internal consistency. An orthogonal rotation is the process of extracting factors maintaining the axes at 90 degrees while seeking simple structure to minimize complexity by maximizing the variance for each factor (Mertler & Vannatta, 2005). The Varimax analysis technique rotates the data so that the variation of the squared factor loadings are maximized if loading high, and those that load low are minimized within each particular factor to facilitate interpretation. Loadings are obtained by dividing each variable's loading by the root of its communality. By this scaling of scores, all variables are given equal weight in the rotation, with each factor remaining independent from the other factors. The correlation between factors is determined to be zero. The orthogonal rotation does not alter the values of the communality estimates.

The researcher conducted a Varimax rotation of the data to explore the different possibilities of distributions. The author analyzed the assessment of receptivity to treatment,

levels of self-efficacy, and the identification of dynamic variables. The data analyses was completed to examine the characteristics of the sample. The instrument tests the hypotheses and research questions that outline the study. The analyses includes the following statistical procedures:

1. Descriptive statistical analyses of the instrument for the purpose of clarifying and summarizing the data.
2. Factor analyses to reduce the measures into empirically derived latent constructs.
3. Internal consistency (Cronbach's alpha) reliability analyses of sub-scales and total scores for all measures.
4. Correlation analyses of the receptivity to treatment with the self-efficacy construct.

Descriptive statistics includes the means, standard deviations, and analyses of the variables. Statistics are reported for each construct and for the total sample. A factor analysis is utilized to test the dimensionality of the underlying constructs. Factor to factor inter-correlations were completed for the sample. Orthogonal rotations using a Varimax rotation of the data were utilized to identify a set of statistically independent factors for the sample.

Assumptions

The assumptions addressed pertain to the measures that were taken to minimize threats to the internal and external validity of the results. The first basic assumption of this study is to determine if there are at least three items with significant loadings on each identified factor. Second, the variables that load on a given factor will share some conceptual meaning. The third assumption: The MRT GME scale will demonstrate strong psychometric properties, e.g. reliability and construct validity of the scores. The constructs will be well-defined and

represented in the instrument. The variables will load on different factors and will measure different constructs. This methodology is based on data that meets this criteria.

Delimitations

The delimitations of this psychometric investigation are indicated. First, the generalizability of the current findings may be limited regarding the convenience sample that consisted of individuals from one Midwestern state. No demographic information was attained to protect the anonymity and confidentiality of the participants. The population may be more diverse in other geographic regions; therefore, the factorial structure may be different for various populations. Second, self-report measures, such as with the MRT GME, may be susceptible to response bias due to the survey format. Finally, the MRT GME instrument was only investigated under a specific circumstance with an offender population required to attend the MRT sessions as a component of completing their probation sentences. Findings may not generalize to other people or situations.

Summary

The researcher conducted this quantitative study using a secondary data set from 227 adult male and female offenders completing a probation sentence. Their participation in Moral Reconciliation Therapy group treatment included them in this study as an attempt to measure the factor structure of an instrument and to explore the correlations between the group participants' perceptions of their receipt of Moral Reconciliation Therapy treatment and their identified self-efficacy factors. The researcher conducted a statistical analysis using Cronbach's alpha, principal components analysis, and a Varimax rotation of the data.

CHAPTER IV. RESULTS

This chapter provides the statistical results of the current study. Distinctly, the author completed four phases of research to answer the research questions and the related hypotheses regarding the internal consistency of the MRT GME, the factor analysis, and the correlation between the two scales.

Research Questions

1. What are the relationships between the MRT GME items and the identified constructs?
2. What is the internal factor structure of the MRT GME?
3. Does the receipt of treatment factors correlate with self-efficacy?
4. Do the MRT GME scores measure the stated underlying constructs: “receipt of MRT treatment” and “self-efficacy”?

Hypotheses

1. There is a relationship between the MRT GME items and the identified constructs operationally defined as “receipt of MRT treatment” and “self-efficacy.”
2. There is a nondirectional relationship between scores pertaining to the receipt of MRT treatment and self-efficacy scores.

The results of the research are divided into the following four phases 1) descriptive statistics from the MRT GME sample scores, 2) examination of the MRT GME factor structure to identify and distinguish the constructs regarding the perceptions of receipt of participants’ MRT treatment, 3) the correlation between the MRT GME and Self Efficacy scales, and 4) results of the exploratory factor analysis with a Varimax rotation of the data to address the underlying constructs regarding the different factors of the MRT GME instrument.

Reliability Analysis

The correlation between variables that comprise each factor (e.g., assessment of self, current relationships, positive relationships, positive identity, and self-concept) are measured on the MRT GME. Self-efficacy is the single construct measured in the second scale. The correlation between variables are analyzed using reliability analysis. The statistics that are analyzed are inter-item correlations, covariance, and the alpha, a test of internal consistency depending on the inter-item correlations. The researcher provides descriptive statistics information regarding each variable, the index, and the index if a variable is deleted. Cronbach's alpha was used to assess the internal consistency reliability, and examine the instrument's error of measurement. The results include preliminary evidence that it is appropriate to measure the MRT GME instrument psychometrically. Table 5 indicates the item to total correlations and the Cronbach's alpha items if deleted scores.

Phase I: Descriptive Statistics

The researcher completed the initial analysis of the MRT GME to assess for an adequate number of scores required for this study using Statistical Package for the Social Sciences 22.0 (SPSS 22.0, Inc.). The participants' scores on the MRT GME indicated means and standard deviation. The range of variance of the scores are provided for the 227 participants. No scores exceeded the minimum or maximum levels of the Likert scale. The initial sample consisted of 237 completed MRT GME assessment questionnaires. The mean of the variances between items was not widely spread. Table 4 provides the descriptive statistics of all of the variables in the instrument for a sample of 227 participants.

The sample consisted of 237 completed MRT GME assessment questionnaires. However, after removing ten participant scores due to missing responses, the resulting sample consisted of

227 scores. The researcher decided to remove 10 participant scores of the missing data which made up 4.2% of the total scores. Cheema (2014) describes the appropriateness of handling missing data in a meta-analysis regarding current research. Methods for handling missing data include discarding cases listwise (deleting the entire case with missing values), pairwise deletion (deleting only the missing value), and imputation-based methods (replacing the data with estimated values) using the following guidelines: a sample containing less than 1% of missing data is considered trivial, 1% to 5% missing data is considered appropriate to utilize simple methods such as listwise deletion and regression imputation methods, and finally suggested that no imputation methods are considered appropriate when missing data exceeds 15%. Therefore, the researcher of this study decided to remove the missing data listwise. Therefore, scores of 227 participants completing two instruments in a previous study were used for this study. Descriptive statistics and internal consistency reliabilities for the MRT GME ratings are reported in Table 4. The range of the mean scores were 2.63 to 3.83, and the range of the standard deviation scores were 0.57 to 1.23.

Table 4. Descriptive Statistics of all Variables for a Sample of Offender Adults (n = 227)

Subscale	Mean	Standard Deviation
1.	3.11	1.04
2.	3.03	1.05
3.	3.02	1.08
4.	3.02	1.08
5.	3.06	1.09
6.	3.19	1.03
7.	3.22	0.98
8.	2.63	1.21
9.	3.26	1.05
10.	3.58	0.86
11.	3.38	0.89
12.	2.96	1.23
13.	3.52	0.90
14.	2.82	1.11
15.	3.20	1.02
16.	3.03	1.06
17.	3.06	1.04
18.	3.19	1.02
19.	3.15	1.08
20.	3.53	0.86
21.	3.60	0.90
22.	3.48	0.92
23.	3.15	1.04
24.	3.12	1.02
25.	3.44	0.95
26.	3.28	1.11
27.	3.56	1.01
28.	3.56	0.72
29.	3.83	0.57

The reported means for the MRT GME are based on an average of the items utilizing a 5-point Likert response scale.

Phase II

In phase two, the researcher provides the results of the analyses that address the first two research questions regarding the internal factor structure of the MRT GME.

Research Question 1

What are the relationships between the MRT GME items and the identified constructs?

The researcher conducted Cronbach's alpha to assess the internal consistency reliability, and to examine the instrument's error of measurement. Item to total correlations and Cronbach's alpha items if deleted scores are provided. A low alpha score indicates the items have very little in common. An alpha of .30 is considered very low in psychometric testing. An alpha score of .70 or higher indicates that items may be combined into a reliable composite score. A positive step to increase the reliability of an instrument is to increase the number of items measuring the constructs (Nunnally & Bernstein, 1994). Achieving the fewest number of items that maintain the highest alpha score is intended to achieve an optimal instrument (DeVellis, 2012). The results provide preliminary evidence that the instrument can be measured psychometrically. Question 17 was the only question loading above the .80 level indicating 1) the item may be redundant or 2) the item may be ambiguous, or 3) the item may be measuring the entire scale rather than a distinct construct. The "alpha if deleted" column provides the level of alpha remaining in the scale if the item is deleted. The changes in the scale if any of the items were deleted is little to none overall for the MRT GME. This result provides justification to make the decision to delete or revise item 17. The item-total statistics do not indicate that the elimination of any of remainder of the MRT GME items will significantly increase the alpha score indicating that that each item may contribute to the scale. However, assessing changes to the specific questions by revising question 17 may increase the strength of this specific item and improve the scale. Table 5 provides the item-total correlations of the MRT GME. All items in Table 5 are based on a 0-4 Likert-scale. Bolded items denote significance (between .20 and .80).

Table 5. Item-Total Correlations of the MRT GME

MRT GME Item	Corrected Item- Total Correlati on	Cronbach 's Alpha if Item Deleted
learn something important about myself.	.718	.961
learn more about my feelings.	.763	.961
try new ways to interact with family or friends.	.696	.961
learn more about my experiences.	.747	.961
know how I am doing with MRT steps.	.776	.961
learn how to get to the next step.	.784	.961
feel like others want me to succeed.	.650	.962
feel less anxious.	.598	.963
feel I can control my temper.	.584	.962
realize that I am responsible for my behavior.	.601	.962
work hard in the MRT program	.745	.961
trust the other group members.	.631	.962
trust the group leader.	.679	.962
manage conflicts with people I dislike.	.600	.962
see how I have hurt others.	.683	.961
talk about my problems.	.765	.960
learn new ways to make finish each step.	.830	.961
cooperate with others in the group.	.737	.961
share my strong feelings with loved ones or friends.	.699	.961
follow group rules.	.703	.962
stay out of trouble with the law.	.656	.962
think before I act.	.646	.962
make my community better.	.666	.962
try new activities.	.674	.962
make progress on my MRT steps.	.753	.961
feel happier.	.730	.961

Item Analysis

The initial analyses was completed to assess for an adequate number of participants required for this study. The researcher conducted a preliminary analysis to determine if the data met the assumptions necessary to complete a factor analysis. Bartlett's Test of Sphericity

indicated the relationship between the scores of the sample's variables was strong enough to conduct a factor analysis.

Research Question 2

What is the internal factor structure of the MRT GME?

Initial Factor Analysis

There are several procedures to determine whether a given dataset is appropriate to conduct a factor analysis. One technique is to examine the correlation matrix for correlations that exceed .30 (Tabachnick & Fidell, 2001). If there are no correlations that meet this criterion, it is not recommended that one proceed. Another preliminary method to test the data set is Bartlett's Test of Sphericity (Nunnally, 1994). The Bartlett's Test of Sphericity for this study was significant ($\chi^2 (325) = 4546.097, p < .05$). A Bartlett's test p -value was below the .001 level suggesting an adequate sample score.

A value above .60 on the Kaiser-Meyer-Olkin (KMO) measure of sampling indicates that the dataset is appropriate to complete factor analysis procedures. Examination of the correlation matrix of variables identified numerous correlations indicating an appropriate preliminary analyses. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is based on correlation and indicates if the data is likely to factor well (Nunnally, 1994). The result for this analysis was sufficiently large (KMO = .96) above the recommended value of .60 (Nunnally, 1994). The KMO Measure of Sampling Adequacy is based on correlation and indicates if the data is likely to factor well (Nunnally, 1994). Criteria to determine the number of factors in the solution included the Kaiser criterion, a Cattell scree plot, a variance explained table, and a minimum factor loading criteria.

With no factors eliminated, initial communalities equal 1.0 or explain 100% of the variance. Extracted communalities indicate how strongly the original variance is explained by

the factor structure for each item which indicate whether the factor structure describes over half of the variance (Hair et al., 1998). The Kaiser (1960) eigenvalues greater than one rule is a common method to assist in determining the number of factors in the solution.

Cattell's (1966) indication of a scree plot is a test used in this study to address the significant weight of variance criterion. Factors are presented as a visual explanation of the data structure according to the percentage of variance contributed by each item. The number of factors contained in the data are indicated above the angle or "elbow" with additional items following in a near straight line indicating the "scree." The eigenvalues indicate whether the inclusion of factors will add significantly to the variance of the solution. Starting with the first factor, the scree plot initially slopes steeply down and then becomes nearly a horizontal line. The place at which the line first begins to straighten is considered to be the maximum number of factors to extract. The total variance explained provides evidence of four factors that emerged as interpreted with the first four factors above the angle in the present analysis. The last angle is on the fifth factor indicating that a four-factor solution was justified.

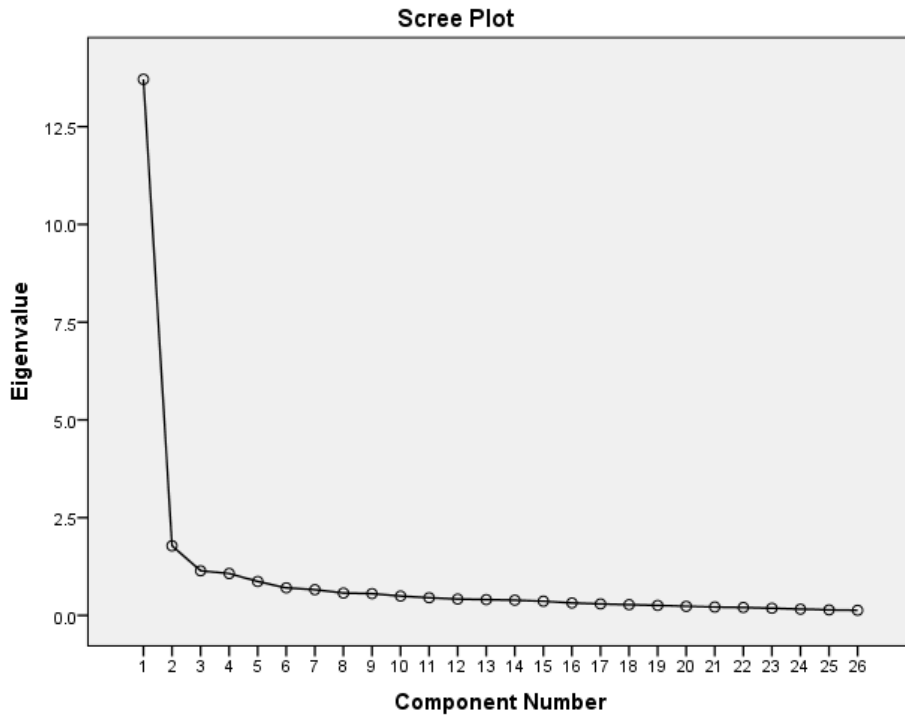


Figure 1. Scree Plot of the Eigenvalues of the MRT GME

The four-factor solution of the present analysis explains 68.1% of the variance. A simple structure analysis required this author to perform the procedures addressing the assumptions indicated in this study. Factor loadings were strong enough to meet the minimum number of assumptions for each identified factor. Each item was required to load higher than .30 (Hair et al., 1998) to reach a commonly acceptable level. Norman and Streiner (1994) suggest a minimum of .40 with loadings between .40 and .60 as moderate; those above .60 are considered strong. To increase the distinction between factors, the minimum factor loadings for the MRT GME was set at .50. Hatcher (1994) suggests three or more items minimum as a required loading on a given factor. In the four-factor solution, each component loading was higher than .522 for this sample of offenders (See Table 10).

Structured Analyses

The researcher addressed the second research question by completing exploratory factor analysis (EFA) to examine the internal factor structure of the MRT GME based on the analysis of the covariance structure. Factor analysis is the oldest and most commonly used statistical procedure for examining the relationship between the variables of an instrument (Nunnally, 1978). Examination of the covariation amongst the set of variable scores describes the underlying latent constructs (factors) in a new instrument or measure (Byrne, 2005). Exploratory Factor Analysis is appropriately used deductively when there is some knowledge of the underlying latent variable structure based on theory. The author tested this hypothesis statistically by conducting the analysis of scores which determined the extent to which the underlying latent variable was consistent with the data.

Exploratory Factor Analysis

Exploratory factor analysis was the statistical analysis selected for this study based on recommendations for testing newly developed instrument measures (Kline, 1993). One of the most important aspects of factor analysis is determining how many factors are present. The goal is to find the common factors of the instrument before assessing their relationship with a second scale. The exploratory factor analysis conducted with a Varimax rotation was completed to allow the factors to emerge and load on a particular factor. Secondly, the construct validity of the MRT GME was tested.

Exploratory Factor Structure

Assessing the psychometric properties of an instrument, principle factor analysis is considered one of the most successful methods to find factors and to examine their unique characteristics and sensitivities (Kline, 1993). The number of factors that were retained was

determined by a number of criteria including the eigenvalues greater than one rule (Kaiser, 1970), the percentage of variance accounted for, and the minimum number of variables loading on a factor criteria (O'Rourke, Hatcher, & Stepanski, 2005). The four-factor solution was based on the variance accounting for 68.1% of the total variance of the eigenvalues.

Factor Rotation

For this exploratory study, the test's author completed an orthogonal Varimax rotation. An orthogonal solution is the approach most often used in newly developed survey analyses to seek simple structure (Nunnally, 1978). Orthogonal rotation methods do not allow factors to correlate. Table 6 provides the eigenvalues of the MRT GME from the Varimax rotation of the data.

Table 6. Eigenvalues of the Reduced Correlation Matrix

<u>Factor</u>	<u>Total Eigenvalue</u>	<u>% of Variance</u>	<u>Cumulative Variance</u>
Self Assessment	13.711	52.74	52.77
Positive Relationships	1.780	6.85	59.58
Current Relationships	1.143	4.40	63.98
Positive Identity	1.071	4.12	68.10

Table 6 presents the four-factor solution with factor loadings regarding the rotated component matrix of the MRT GME items. To enable easy reading of the relationship between the MRT GME items and the identified constructs, the author created the following correlation matrix to illustrate the items of each factor and all of the identified constructs. Table 7 provides the results of the factor analysis with each of the items that loaded on the distinct factor.

Interpreting and Labeling Factors

Table 7. Principal Axis Factor 1 of the MRT GME

Item	Factor 1
MRT stem: This MRT group helped me to...	
1. learn something important about myself.	.821
2. learn more about my feelings.	.822
3. try new ways to interact with family or friends.	.755
4. learn more about my experiences.	.812
5. know how I am doing with MRT steps.	.713
6. learn how to get to the next step.	.663
7. feel like others want me to succeed.	.529
11. work hard in the MRT program.	.567
13. trust the group leader.	.568
16. talk about my problems.	.547
17. learn new ways to finish each step.	.590

Factor One: Learning about Self

The first MRT element addressed in the findings, shares a theoretical theme from the MRT element regarding “confrontation and assessment of self which includes the highest number of items, 11 (1, 2, 3, 4, 5, 6, 7, 11, 13, 16, & 17). Of the rotated scores loading on this factor, four of the 11 items were developed to represent this factor and were subsequently supported by the scores. The 11 items which comprise factor one address the initial and middle stages of treatment which line up with earlier theoretical stages of moral development. A

common theme that these 11 items share is learning about self through interaction with others, thus the factor is named “assessment of self”; a component addressing the first MRT element.

Table 8. Principal Axis Factor 2 for MRT GME

<u>Item</u>	<u>Factor 2</u>
MRT stem: This MRT group helped me to...	
20. follow group rules.	.742
21. stay out of trouble with the law	.813
22. think before I act	.742
23. make my community better	.577
<u>25. make progress on my MRT steps</u>	<u>.635</u>

Factor Two: Decision Making

Table 8 provides the items that loaded on the second factor. This construct contains items that share a theme; “positive relationships.” Five items load on this factor (20, 21, 22, 23, & 25); three of the items developed from the MRT elements align with the third MRT element addressing the construct of positive relationships. Two items loading on this factor address middle to later stages of moral development and later steps of the MRT model addressing trust and caring about others. Table 9 provides the items that loaded on factor three.

Table 9. Principal Axis Factor 3 for MRT GME

<u>Item</u>	<u>Factor 3</u>
MRT stem: This MRT group helped me to...	
9. feel I can control my temper	.685
10. realize that I am responsible for my behavior	.626
<u>12. make my community better</u>	<u>.639</u>

Factor Three: Current Relationships

The third factor, “Positive Relationships,” comprised of three items (9, 10, and 12) contained one item that was theoretically derived from the second MRT element suggesting assessment of current relationships. Items that loaded on factor four refer to interacting with others in the group and address a higher level of moral development pertaining to caring about others.

Table 10. Principal Axis Factor 4 for MRT GME

Item	Factor 4
MRT stem: This MRT group helped me to...	
14. manage conflicts with people I dislike	.646
19. share my strong feelings with loved ones or friends	.638
24. try new activities	.706
26. feel happier	.522

Factor Four: Positive Identity

Factor four, “Positive Identity” loaded four items (14, 19, 24, & 26) designed for the fifth MRT element, “enhancement of self-concept through ego-enhancing activities.” Two of the four items comprised of this construct address aspects of interacting with others. The third and fourth items address participants’ development with their progression of development and focus on increasing their positive emotions.

This author indicates that the Varimax rotation results in items 8, 15, and 18 not loading on any of the four factors of the MRT GME. These items may be considered for elimination from the MRT GME instrument due to their low scores failing to load significantly at the .50 level. Scores for these items in consideration for elimination ranged from .345 to .414.

Phase III: Factor Structure

Research Question 3

Do the receipt of treatment factors correlate with self-efficacy?

Table 11 provides the correlation results between the two scales.

Table 11. Correlational Matrix of the Constructs of the MRT GME and Self Efficacy Scales

Factor	1	2	3	4 Self-Efficacy	
Learning About Self	---				
Decision Making	.71	---			
Moral Decision Making	.68	.61	---		
Positive Identity	.70	.75	.66	---	
Self-Efficacy Scale	.24	.29	.36	.24	---

All of the items indicate a degree of correlation from the analysis of the two scales ranging from .24 (the level of correlation between self-efficacy with factor one, “Assessment of Self” and self-efficacy and with factor four described as “Positive Identity” on the MRT GME) to .36 (the level of correlation between self-efficacy with factor three described as “Current Relationships” on the MRT GME). All factors describe a positive correlation with self-efficacy though considered modest, with factor three nearing a moderate correlation with the self-efficacy scale.

Phase IV: Analysis of the Underlying Constructs

Research Question 4

Do the MRT GME scores measure the stated underlying constructs “receipt of MRT treatment” and “self-efficacy”?

Correlation Analysis

The first decision in the application of factor analysis included the calculation of factors resulting in the correlation matrix. Second the correlation matrix was examined for intersection of columns with the rows of the variables. The correlation matrix provided an intersection of significant columns with rows each including a variable of one. Table 12 provides the results of the correlation matrix of the four factors on the MRT GME scale.

Table 12. Correlational Matrix of the Four Factors on the MRT GME

Factor	1	2	3	4
1.Assessment of Self	1.00			
2.Positive Relationships	0.71	1.00		
3. Current Relationships	0.68	0.61	1.00	
4. Positive Identity	0.70	0.75	0.66	1.00

As indicated by research question four, the scale representing receipt of MRT treatment correlated with each factor. To demonstrate construct validity, the researcher utilized intercorrelations between the factors, or subscales, to suggest that the MRT GME scores correlated positively. Of the 26 items that comprise the MRT GME 11 items loaded on one of the four factors. Though there is not sufficient evidence to support with certainty, these items appear to be measuring a similar construct. More tests are recommended to follow up this study to explore whether the MRT GME scores of additional samples will measure the stated underlying constructs: “receipt of treatment” and “self-efficacy.”

Rotated Factor Loading

Thurstone (1956) developed the principle of simple structure suggesting that variables are understood best if explained using the fewest number of factors possible. This follows the principle of parsimony, that entities choose the explanation that most simply describes the facts. Lloyd Morgon's canon and Occam's razor follow the principle of simplicity; two examples often referred to in the natural sciences (Kline, 1993). Simple structure is the attainment of factors with mostly zeros or near zero loadings and a few high loadings.

Correlation Matrix

The Correlation Matrix indicates that there is a positive correlation between receipt of treatment and self-efficacy for each of the identified constructs. There is statistical evidence that there is a correlation between the receipt of treatment and self-efficacy scores. Support is provided with the results that the MRT GME items may contribute to the scale, however, assessing changes in the specific questions may increase the strength of the item and the strength of the scale.

Results of the Varimax rotation of the data indicated that three of the twenty-six items did not fall within the optimal range between .20 and .80 (items 8, 15, and 18). This indicates that the items which did not fall within the optimal range may contribute little, if any, to the measurement of the construct: receipt of MRT treatment. However, in the Cronbach's alpha procedure all of the Cronbach's alpha values were between .960 and .963, therefore, the recommendation by the researcher is to retain all of the items which appear to contribute consistently to the scale and recommend revision or elimination of item 17 ("learn new ways to make finish each step"). If item 17 were deleted, alpha for the scale would be .961. If any of the items were to be deleted from this scale, the raw alpha would not increase to more than .963

which is not significantly different than if the items were included in the scale. All items contributed fairly equally to the scale.

Hypothesis 1

There is a relationship between the MRT GME items and the identified constructs operationally defined as “receipt of MRT treatment” and “self-efficacy.”

The researcher found that there was a positive relationship between the scores in this study that support preliminary testing of items developed for the MRT GME scale theoretically designed to measure “receipt of MRT treatment.” A close relationship of the variables is stronger the closer the loading is to either -1 or 1. The second scale theoretically identified as measuring “self-efficacy” fell below Cronbach’s alpha suggested minimum level of .60 presenting a level of .58. There were low correlations between items ranging from .29 to .36 on this scale. All of the correlations were positive and in the same direction. This author suggests adding more items to the self-efficacy scale to increase the power of the scale and to allow for testing of its factor structure.

Hypothesis 2

There is a nondirectional relationship between scores pertaining to the receipt of MRT treatment and self-efficacy. There is statistical evidence that supports a positive relationship between receipt of MRT treatment and self-efficacy items. Though the magnitude of the correlation is low, the correlations are all positive. A positive correlation indicates that as one variable increases, another variable also increases and the two variables have positive linear correlation. A perfect linear relationship has a correlation coefficient of one. A high correlation coefficient indicates a strong connection between the two variables.

The fourth and final research question was addressed during phase four. The constructs were analyzed to determine if the scores provided evidence that the instrument measured the theoretical constructs. The structure of the MRT GME instrument was examined during this phase using principal factor analysis with an orthogonal rotation. Results from the four phases of research are described in this chapter followed by a summary of the results.

CHAPTER V. DISCUSSION

This chapter includes a discussion of 1) the purpose of the study; 2) an overview of the methodology; 3) discussion of the results; 4) limitations of the current study; 5) recommendations for future results; and 6) implications for future study.

Purpose of the Study

The purpose of this study was to investigate the psychometric properties of an instrument including the factor structure of the Moral Reconciliation Therapy Group Therapy Evaluation scale in terms of internal consistency of scores, factor rotation, and correlation of scores between the MRT GME instrument and its correlation with the Self-Efficacy Scale. The MRT GME instrument and the Self-Efficacy Scale represent unique scale development for the purpose of assessing offenders' receipt of treatment and levels of self-efficacy regarding the fidelity of Moral Reconciliation Therapy treatment. These instruments offer a crucial missing piece to objectively measure MRT offenders' perceptions regarding their receptivity to group therapy and self-efficacy factors. Previous measures focus on screening and assessing risk factors for individuals entering treatment while on federal probation but fail to address the level of engagement of the offender once they are enrolled in treatment. The utility of these objective measures address participants' receipt of MRT treatment and self-efficacy factors to provide appropriate assessment regarding the fidelity of treatment and provide an objective measure for use in future research.

The structure of the instrument was examined using Cronbach's alpha statistical analysis procedure to assess the internal consistency reliability, and was used to assess the error of measurement. These results provide preliminary evidence regarding the underlying constructs of the factor structure of the instrument. These findings suggested that the items constructed for the

MRT GME may be measuring similar constructs. More testing of this measure is needed before its consideration for individuals as a valid and reliable instrument.

Overview of the Methodology

The researcher conducted a quantitative research study including Cronbach's alpha, exploratory factor analysis, and a Varimax rotation of the variables to examine the factor structure of the MRT GME. A principal factor analysis was conducted on the MRT GME scores to determine its underlying factor structure. Criteria including (1) the Kaiser criterion of eigenvalues greater than one rule, (2) a Cattell Scree Plot, a graph to visualize the number of factors, (3) percentage of variance criterion which factors measure more than 50% of the variance, and (4) a minimum factor loading of .50 criteria were used in the solution for this study. Once each factor was identified as part of the MRT GME, the Pearson correlation for the relationship between the two scales was tested.

Discussion of the Results

Phase I

The initial phase of research included preliminary tests to establish justification to complete additional analyses of the secondary data set. The assumption of normality of scores was assessed to address the significance before conducting factor analysis and Cronbach's alpha. Item analysis was conducted through internal consistency reliability assessment using Cronbach's alpha for the MRT GME assessment scale. Results of the reliability analyses are provided. The results of the scale reliability scores ranged from ($\alpha = .584$) to ($\alpha = .830$).

Phase II

Structural Analyses

After the development of an instrument, it is important to test the factor structure to determine if it can be replicated on additional samples before determining the items for the test. Research questions one and two were addressed in phase two. The researcher examined the factor structure of the two instruments. Cronbach's alpha was conducted to test the internal consistency reliability of the MRT GME. The results provided evidence at .96 to continue with testing the instrument psychometrically. The Self-efficacy measure had lower results with Cronbach's alpha resulting at 5.77 which is below a significant level needed to continue with additional testing of the factor structure.

Phase III

Research question three was included in the analysis of phase three. The correlation matrix indicated that most variables had sufficient correlations to suggest using appropriate use of factor analysis. Bartlett's Test of Sphericity was significant ($p < .05$), indicating that the correlation matrix contained some variables that were significantly correlated. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was significant ($KMO = .96$) predicted that the data indicated a likelihood to factor well based on correlation and partial correlation.

Principal factor analysis was performed to assess the structure of the Moral Reconciliation Therapy Group Member Evaluation Scale and test its dimensionality. Analysis indicated four factors with eigenvalues larger than one. Analysis of the scree plot indicated one factor accounted for 52.74% of the variance, the next factors accounted for 6.88%, 6.85%, 4.39%, and 4.12% of the variance.

Phase IV

The researcher addressed question four in phase four. Exploratory factor analysis using a Varimax rotation was completed to assess the underlying constructs of the data set of the MRT GME scores and the underlying constructs: “receipt of MRT treatment” and “self-efficacy.” Results of the analysis for the scale are provided.

Factor analysis of the MRT GME resulted in a four-factor structure with 11 items that reflected assessment of self, five items representing the construct “positive relationships,” three items indicating “current relationships,” and four items suggesting the construct, “positive identity.” The percentage of variance explained by the four-factor structure surpassed 50% with internal consistency as high as 68%. Correlation scores with the self-efficacy scale of three items was in the moderate range. The correlation of scores was modest. The sentence construction of the items in the two measures is provided as a partial explanation for the lack of consistent results. Adding more items to the self-efficacy scale may add to the power of the scale and to the stability of scores when assessing the constructs. Preliminary support for the validity and reliability of scores for one sample was shown with the MRT GME, however, more tests utilizing additional samples are needed before indicating the results of the validity and reliability of the scales. The relationship between the MRT GME and the Self-Efficacy scales was low but all numbers were positive ranging from .24 between self-efficacy and factor one (Assessment of Self) and the highest at .36 between self-efficacy and factor three (Current Relationships). Finally, correlations with the MRT GME and the self-efficacy scale confirmed that there was a positive relationship between the scales though this correlation was low.

Functional Assessment of the Fidelity of MRT Treatment for Offenders

The need for quality assessments for the fidelity of treatment for offenders on probation is clear (Bourgon, Bonta, Rugge, Scott, & Yessine, 2010). To address this need, steps toward the improvement of the Moral Reconciliation Therapy Group Member Evaluation should continue with item development including adding more items to the self-efficacy scale which may enhance the validity of the self-efficacy construct. Removing a small number of items from the fidelity scale and a revision of the items may likely improve the validity and reliability of the scores. In the present format the self-efficacy scale contains just three items; it is likely that more options would increase the reliability of the scale. Adding items to an instrument is likely to increase the reliability of the instrument (Nunnally & Bernstein, 1994).

Implications for Future Use

This study was conducted to evaluate the fidelity of MRT treatment with offenders. The two scales were developed to measure the identified constructs of fidelity (receipt) of MRT treatment for offenders, and self-efficacy with the potential to address multiple important issues. These variables seem to address the fidelity component of Moral Reconciliation Therapy group treatment for offenders. This research may add to the success of individuals who are working to complete a federal probation sentence.

Low scores on the results pertaining to the self-efficacy scale may be related to the lack of training MRT facilitators receive when learning how to increase the fidelity of their practice. The correlation between receipt of MRT treatment and self-efficacy may indicate the hypothesis that as offenders become more engaged in treatment and progress through the stages of moral development, their self-efficacy increases. In the future, a focus on self-efficacy may provide a greater number of tests to measure this construct objectively. This research provided information

useful in understanding the relationship between fidelity of MRT treatment and self-efficacy in correctional treatment with offenders on probation. However, fidelity and self-efficacy are general terms. Operational definitions of these terms are needed to reduce these concepts into more concise, meaningful concepts. The self-efficacy scale may be limited with only three items comprising the scale. More items may offer a multidimensional scale and may allow more statistical analyses to be conducted for testing of the instrument. Assessment tools that measure these constructs are needed to assess the fidelity of MRT treatment and individuals' self-efficacy regarding its impact on treatment and rates of recidivism. Interpretation of the MRT GME and of the Self-Efficacy scales should be done cautiously when assessing participants of MRT treatment. Additional testing of these scales is needed to gain a deeper understanding of the constructs these instruments are measuring and how they may be used to improve fidelity of treatment measurement in research development. Comparative tests are needed to provide empirical evidence that the assessments measure the constructs they claim to measure. To improve generalizability, replication of this study with a random sample is needed to better determine the instrument's factor structure and its relationship to the underlying constructs.

This study was one of the first to investigate the relationship between MRT fidelity and self-efficacy. The test developers may address improvements to the assessments by considering additional items to add to the self-efficacy assessment, and to revise the items to increase their distinction between the constructs. Multicultural components may be added to the assessments.

Strengths and Limitations

A strength of this study included the use of a moderately sized sample, the use of multiple criterion to assess the factor structure of the assessments, and several different methods to address fidelity of treatment. There were an equal number of scores in the comparison groups.

Despite the strengths of this study, there was a limitation in the need to utilize a convenience sample, which limits the external validity of the measure. Another limitation of this study was the small radius in which the data was collected in the Midwest. Finally, factor analysis results were not optimal in that missing data was not accounted for. Correlation coefficients were not above the recommended levels. Therefore, psychometric improvements in these areas are needed to increase the validity of these instruments.

Directions for Future Research

The researchers may improve upon these limitations in future research studies by addressing the content validity with the addition of new items. Assessing MRT group members who are experiencing different stages of MRT treatment may increase the external validity of the assessments. Accounting for a more balanced number of men and women or gender specific studies may add to our understanding of gender differences and may provide a deeper understanding of the instruments. Collecting demographics information of the participants may be an added benefit of having more information, determining test-retest reliability, and increasing the number of methods of analyses. The inclusion of a social desirability measure may allow for the possibility of a bias in the scores and creating items that are inversely scored may increase the understanding of the scores. Adding items that represent all of the MRT elements is an aspect that may increase the fidelity of the measure.

A major step forward in future research addressing the needs of offenders is to measure fidelity in treatment. This includes developing empirically sound assessments. Research in assessment development requires attention to areas that were not addressed in this study including the inclusion of multicultural components beyond Kohlberg's moral development

stages addressed in MRT. Gender and race considerations may improve future studies and group skills training for implementation of MRT treatment.

Finally, the potential for the use of the MRT GME as an objective measure of fidelity of treatment regarding the criminogenic needs of this population is considered. This author recommends conducting more research and that the findings are made available to program developers and health providers who work with offenders participating in MRT treatment. These steps are needed to provide appropriate assessments that measure the fidelity of treatment and provide objective measures for use in future research.

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APPENDIX A. MRT FREEDOM LADDER

<p>Steps 13-16 – Evaluate relationship between Inner Self and personality.</p>	<p>GRACE Few persons reach this state where they see others as an extension of themselves. Reaching grace means one must give oneself to a major cause. In this stage, a person’s identity fuses with others as well as a social cause. Doing the right things, in the right ways, for the right reasons, are primary concerns. Values are placed on human life, justice, dignity, and freedom. Gandhi, King, and Mother Theresa are a few examples.</p>
<p>Step 12 – Choosing moral goals</p>	<p>NORMAL People who experience this state have incorporated their identity into how they live their lives. Thus, they have their needs fulfilled without a great deal of effort. To those on this stage, work isn’t work. However, their identity nearly always involves the welfare of others, whether it is the welfare of their employees or family. They often become involved in social causes and have genuine concerns for others. They give great consideration to their own conduct and are not quick to judge others. They attempt to keep their relationships on honest, trustworthy levels where they are accountable. It is clear that people in this stage have chosen the right identify (set of goals). Moral judgments are based about half-and-half on societal and ethical principles.</p>
<p>Step 11 – Keeping moral commitments</p>	<p>EMERGENCY A sense of urgency in completing goals dominates this stage because individuals are totally committed to fulfilling personal goals. The goals of people in this stage are broader and include the welfare of others rather than goals being narrow and self-serving. They feel in control of their lives, but often feel that they have committed and are in risk of failure if they slow down. Most of their decisions are based on what is best for society and their organizations, but they show higher, idealized, ethical principles as well. In addition, they sometimes “slip” to lower levels of reasoning but attempt to rectify this as soon as they realize it.</p>
<p>Step 10 – Maintain Positive Change Step 9 – Commitment to change</p>	<p>DANGER The major distinction between danger and nonexistence is that those in danger have committed to long terms goals. They feel the risk of danger and have communicated their desires to others. They feel a definite direction in their life and see relationships as necessary, important, and satisfying. They usually gain their identity from their long-term goals and recognize the requirements of situations quickly. Most of these people make their moral judgments from the societal contract level and “law and order.” Many of them ‘slip’ to lower stages of reasoning and feel a sense of personal letdown when this occurs.</p>

<p>Step 8 – Short term goals and consistency</p> <p>Step 7 – Long term goals and identity</p>	<p>NON-EXISTENCE</p> <p>Those in nonexistence do not have a firm sense of identity and do not feel connected to the world. They often feel little purpose in their life, but do not feel responsible for what happens to them. While they feel somewhat alienated, they can have satisfying relationships. Oral judgments can be made from “law and order,” pleasing others, reciprocity, or pleasure/pain.</p>
<p>Step 6 – Helping others</p> <p>Step 5 – Healing damaged relationships</p>	<p>INJURY</p> <p>People in this stage know when they have hurt others or themselves and feel responsible for it. Low self-esteem, guilt, and feelings of inadequacy often predominate. While they seem to “let down” others and themselves frequently, they recognize that they are the source of their problems. This is the first stage that positive relationships can occur. People in injury have trouble following through on their goals and personal commitments. Oral judgments are based on pleasing others, pleasure/pain and reciprocity.</p>
<p>Step 4 – Awareness</p>	<p>UNCERTAINTY</p> <p>People in this stage may lie, cheat and steal, but they are uncertain if they should. They typically have no long term goals usually don’t know if there is a direction that is right for them. They show rapidly changing beliefs and a basic uncertainty about other people. They say, “I don’t know,” a lot sometimes are uncertain whether they should or can change. This stage typically doesn’t last long. Their moral judgments are based on pleasing others as well as pleasure/pain and reciprocity.</p>
<p>Step 3 – Acceptance</p>	<p>OPPOSITION</p> <p>People in opposition are quite similar to those in disloyalty. However, those I opposition are somewhat more honest, about it; they pretend less. Those in opposition tend to blame society, the rules, or the unfairness of others for their problems and state in life. They are in open opposition to established order. They tend to be rigid and unadapand are more confrontational, hostile, and openly manipulative, constant conflict is often seen. Moral judgments come from pleasure/pain and reciprocity.</p>
<p>Step 2 – Trust</p> <p>Step 1 – Honesty</p>	<p>DISLOYALTY</p> <p>The stage of disloyalty is the lowest moral and behavioral stage in which people can function. Lying, cheating, stealing, betraying, blaming others, victimizing, and pretense (pretending) are the behaviors characterizing it. Negative emotions, including anger, jealousy, resentment, hatred and depression dominate. Relationships are exploitative. People in disloyalty view the world as a place that cannot be trusted and believe that everyone else lies, cheats, and feels negative emotions. Moral judgments are made on the basis of their pleasure/pain and reciprocity. (Robinson & Little, 1988).</p>

APPENDIX B. MORAL RECONATION THERAPY STEPS

STEPS 1 & 2 require the client to demonstrate honesty and trust.

STEP 3 requires acceptance of rules, procedures, treatment requirements and other people.

STEP 4 represents building a genuine and exhaustive self-awareness.

STEP 5 creates a written summary and plan to deal with the many relationships in their lives that have been damaged because of their substance abuse (and other antisocial behavior).

STEP 6 begins to uncover the right things for clients to do with his/her life and addresses the causes of happiness and unhappiness.

STEP 7 sets goals.

STEP 8 involves refining one-year goals into a plan of action with a timetable.

STEP 9 requires that the individual continue to assist and meet the timetables that he or she sets him or herself.

STEP 10 represents a moral assessment and judgment of all the elements in one's life.

STEP 11 reassesses the relationships in one's life, as well as forming a plan of action to heal the damage that has occurred.

STEP 12 creates a new set of goals. These are set for one year, five years and ten years with the client's judgment of how accomplishing each goal relates to his or her happiness. (Most clients complete MRT with this step.)

STEP 13 through 16 represent confrontation of the self with ever-expanding awareness of self. Individual goals are progressively defines and expanded to include the welfare of others (Robinson & Little,1988.).

APPENDIX C. MRT GROUP MEMBER EVALUATION

Directions: Circle the number that best fits your experience.

		Not at all	Slightly	Somewhat	Pretty Much	Very Much
This MRT group helped me to...						
1)	learn something important about myself.	0	1	2	3	4
2)	learn more about my feelings.	0	1	2	3	4
3)	try new ways to interact with family or friends.	0	1	2	3	4
4)	learn more about my experiences.	0	1	2	3	4
5)	know how I am doing with MRT steps.	0	1	2	3	4
6)	learn how to get to the next step.	0	1	2	3	4
7)	feel like others want me to succeed.	0	1	2	3	4
8)	feel less anxious.	0	1	2	3	4
9)	feel I can control my temper.	0	1	2	3	4
10)	realize that I am responsible for my behavior.	0	1	2	3	4
11)	work hard in the MRT program.	0	1	2	3	4
12)	trust the other group members.	0	1	2	3	4
13)	trust the group leader.	0	1	2	3	4
14)	manage conflicts with people I dislike.	0	1	2	3	4
15)	see how I have hurt others.	0	1	2	3	4
16)	talk about my problems.	0	1	2	3	4
17)	learn new ways to make finish each step.	0	1	2	3	4
18)	cooperate with others in the group.	0	1	2	3	4

19)	share my strong feelings with loved ones or friends.	0	1	2	3	4
20)	follow group rules.	0	1	2	3	4
21)	stay out of trouble with the law.	0	1	2	3	4
22)	think before I act.	0	1	2	3	4
23)	make my community better.	0	1	2	3	4
24)	try new activities.	0	1	2	3	4
25)	make progress on my MRT steps.	0	1	2	3	4
26)	feel happier.	0	1	2	3	4

APPENDIX D. SELF-EFFICACY SCALE

Directions: Circle the number that best fits your experience.

Circle the number that best fits your experience.

0=Not at all 1=Slightly 2=Somewhat 3=Pretty Much 4=Very Much

1) Right now, I could resist the urge to get into trouble.	0	1	2	3	4
2) I have the ability to meet my goals.	0	1	2	3	4
3) I am responsible for the trouble I am in.	0	1	2	3	4

APPENDIX E. IRB LETTER



July 2, 2014

Dr. Brenda S. Hall
Dept of Counselor Education

Re: Your submission to the IRB: "Examining the Psychometric Properties of an Instrument Measuring Treatment Fidelity of Offenders Participating in Moral Reconciliation Therapy"

Research Team: Irene F. Harper

Thank you for your inquiry regarding your project. At this time, the IRB office has determined that the above-referenced protocol does not require Institutional Review Board approval or certification of exempt status because it does not fit the regulatory definition of 'research involving human subjects'.

Dept. of Health & Human Services regulations governing human subjects research (45CFR46, Protection of Human Subjects), defines 'research' as "...a systematic investigation, research development, testing and evaluation, designed to contribute to generalizable knowledge." These regulations also define a 'human subject' as "...a living individual about whom an investigator conducting research obtains (1) data through intervention or interaction with the individual, or (2) identifiable private information."

It was determined that your project does not require IRB approval (or certification of exempt status) because no interaction or intervention is planned with human research participants and the secondary data set to be used does not contain private identifiable information. The board makes this determination conditional on your assertions in the protocol received 7/1/14.

We appreciate your intention to abide by NDSU IRB policies and procedures, and thank you for your patience as the board has reviewed your study. Best wishes for a successful project!

Sincerely,

Kristy Shirley

Digital signature by Kristy Shirley
DN: c=US, o=NDSU, ou=SPR,
email=kristy.shirley@ndsu.edu, cn=K
Date: 2014.07.02 11:48:19 -0500

Kristy Shirley, CIP, Research Compliance Administrator

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