“The Broker of Reality”: A Scoping Review of Moral Reconation Therapy

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“The Broker of Reality”: A Scoping Review of Moral Reconciliation Therapy

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Abstract

Moral Reconation Therapy (MRT) is a cognitive-behavioral treatment program created in 1987 and implemented in correctional-treatment settings across all US states. Social workers and social work practicum students are among MRT’s facilitators. This scoping review article explores the evidence-based literature supporting MRT. First, we analyze the reliability and validity of the most recent meta-analysis of MRT, covering studies published between 1988 and 2010. We then explore findings of a scoping review of peer-reviewed research published between 2011 and 2021. Our review of 669 articles identified through Google Scholar and eleven academic databases yielded zero peer-reviewed studies on MRT’s effectiveness or outcomes. We explore themes that emerged from the exclusion criteria to describe how MRT’s evidence claims may be inflated. Finally, we explore implications for social work educators and practitioners.
“The Broker of Reality”: A Scoping Review of Moral Reconation Therapy

MRT—Moral Reconation Therapy® is the premiere cognitive-behavioral treatment system used in criminal justice. Countless individuals have been treated with the method. Over 200 outcome studies have been published on MRT from various programs. These studies include MRT outcomes on over 100,000 individuals. Virtually all research shows MRT treatment leads to lower recidivism, improvements in personality variables, enhanced treatment compliance, and higher staff satisfaction. (Correctional Counseling, Inc., n.d., para. 1-2)

The above description is taken from the “Research Studies” page of a Moral Reconation Therapy (MRT) website owned by MRT co-creator Greg Little. Little and co-creator Kenneth Robinson describe MRT as a treatment “designed to enhance ego, and social, moral, and positive behavioral growth…in a step by step fashion” (Little & Robinson, 1988, p. 135). MRT is designed for clients considered “difficult” or “impossible” to treat, such as people experiencing poverty, struggling with addiction, or who are involved in the criminal-legal system (p. 135). MRT was first implemented at a Tennessee jail in 1987. That same year, Robinson founded Correctional Counseling, Inc. (CCI), today the sole distributor of MRT materials. CCI (n.d.a.) claims that over three million people have since participated in MRT across all US states and nine countries (para 6).

In 2008, MRT received a yellow or “promising” rating from the Substance Abuse and Mental Health Services Administration (SAMHSA) National Register of Evidence-Based Programs (NREPP) (CCI, 2008, p. 1). Ten years later, SAMHSA indefinitely suspended the NREPP (Peter G. Dodge Foundation, 2018) and declared its rating methodology unsupported.
A statement issued by the Assistant Secretary for Mental Health and Substance Use noted that the NREPP was suspended because many of the programs and practices submitted to the SAMHSA were lacking a rigorous and peer-reviewed evidence base, going so far as to voice concerns about “‘evidence’ based on review of as few as a single publication that might be quite old and, too often, evidence review from someone’s dissertation” (McCance-Katz, 2018). The NREPP should not be used to assess or assert any treatment’s research support at present. Despite this, CCI continues to advertise MRT as a SAMHSA-recognized research-based program (MRT, 2021).

We have encountered MRT as practitioners, educators, and students working with people impacted by the criminal-legal system. Authors Boys and Johnson encountered MRT through MSW field placements: one shadowing a facilitator and the other becoming a certified facilitator. The remaining authors learned about MRT through practice experience and/or teaching students encountering MRT in practicum sites. Our experiences in these social work contexts led us to investigate the (in)congruence between MRT and social work ethics, best practices, and educational standards (Harrell et al., in press).

In this paper, we explore the evidence-based literature supporting MRT. First, we review the reliability and validity of the most recent meta-analysis of MRT, covering studies published between 1988 and 2010. Then we explore the findings of a scoping review that used the following inclusion criteria: (1) articles describing empirical studies—primary research using observation or experimentation to collect and analyze data—of MRT and its effectiveness, (2) articles published in English, (3) articles published in peer-reviewed journals, and (4) articles published between 2011 and 2021. We identified zero articles meeting our inclusion criteria. While unusual for a scoping review, this outcome provides critical insights that may help explain
how CCI’s claims to evidence may be misleading. Finally, we discuss implications of the state of MRT research for social work educators and practitioners.

**Ferguson & Wormith Meta-Analysis**

Curious about MRT’s methods and claims, we each independently explored the treatment’s literature. After reviewing a significant amount of gray literature, including many columns and reviews from Little and Robinson, we came across the only peer-reviewed meta-analysis of MRT: Ferguson and Wormith’s (2013) meta-analysis of 33 “studies” related to MRT, published between 1988 and 2010. While cited by many articles as evidence of MRT’s reputability, we found that the majority of studies used in this meta-analysis were authored by MRT’s creators and received no peer-review. Makel et al. (2012) found that replication studies are less likely to support the original results if there was no overlap in authorship between the original article and the replication study. The overlap in authorship between the intervention and its reported studies raises concern about the reliability of these studies and therefore about the CCI's claims to the intervention's effectiveness. Below, we review the sources of the studies used in Ferguson and Wormith’s meta-analysis.

**Non-Peer-Reviewed Literature**

The majority of studies came from non-peer-reviewed sources. Among these were two masters’ theses published in 1997 and 1998, two annual reports for an Oregon organization delivering MRT, and four government-sponsored program evaluations. Three studies came from sources we were unable to locate using the Ulrich Serials Analysis System (a search source of over 300,000 periodicals): *Correctional Counseling, Inc.* and *Addictive Behaviors Treatment Review*. We did, however, find articles with the same titles in CCI’s company newsletter,
Cognitive Behavioral Treatment Review (CBTR). These publications may be alternative names for CCI newsletters.

Fifteen studies were pulled from CBTR columns. This newsletter is published with a volume and issue number, producing citations that resemble journal article references. However, this newsletter is distinguishable from a journal in four key ways: a) CCI describes the publication as a newsletter on its website; b) submissions are not peer-reviewed; c) the publication is dedicated solely to evaluations, advertisements, and training related to CCI products; and d) its archive is not fully searchable.

**Peer-Reviewed Literature**

Four reports came from the bimonthly peer-reviewed journal, Psychological Reports. This journal publishes “experimental, theoretical, and speculative articles and comments in all areas of psychology” and is often used as a venue to share preliminary reports on research. The four cited reports, ranging from one to nine pages in length, are all authored by MRT co-founders and follow the same longitudinal study across four years.

Only one report was published as a full-length article in a peer-reviewed journal (Journal of Criminal Justice and Behavior). Armstrong (2003) compared the risk of recidivism between a randomized treatment and control group of 256 youth receiving MRT from correctional personnel in a county jail in Maryland in the late 1990s. The study found no significant difference in recidivism rates between groups. Importantly, Armstrong cautioned that “studies conducted by the authors of [MRT] have been used as the primary empirical justification for [its] widespread implementation” (p. 673). It appears Ferguson and Wormith’s meta-analysis may only exacerbate Armstrong’s notice.
MRT has been largely neglected in academic literature. A significant number of articles make brief references to MRT as a promising or “evidence-based” program, citing the Ferguson and Wormith (2013) meta-analysis or sometimes the CCI company newsletter. To date, the most salient attention to MRT has come from a series of journalist investigations published in 2016, starting with Sarah Beller’s article in *The Influence* that focused on MRT’s alleged similarities to Scientology. On a secondary MRT website (moral-reconation-therapy.com) owned by Greg Little, CCI disputes these claims as “false statements and outright lies.” A handful of academics outside of social work offer brief critiques of MRT. For example, in their analysis of eleven pay-for-success projects financed by private capital, Lantz et al. (2016) critiqued the state of MRT’s recidivism outcomes, noting issues of confounding variables and studies of cognitive-behavioral therapy misrepresented as MRT. More recently, Lucken (2020) wrote about needing to exclude MRT from an interrogation of claims made by evaluation literature because the only available systematic review of MRT contained too many studies authored by MRT patent-holders. Within the social work literature, the only peer-reviewed article discussing MRT comes from Jarldon’s (2020) photovoice project with former prisoners in South Australia. The author writes about “one size fits all” programs targeting prisoners’ assumed moral or behavioral deficits. As an intervention delivered by social workers in South Australia, Jarldon (2020) critiques MRT for its individualization, moralization, religious connotations, and rhetoric of personal responsibility and choice.

To understand how the evidence behind MRT has or has not evolved since Ferguson and Wormith’s (2013) review, we conducted a scoping review of MRT studies. For the purposes of this study, we define scoping review as a “preliminary assessment of the potential size and scope of available research literature… [with the aims of identifying] the nature and extent of research
evidence” (Grant & Booth, 2009, p. 101). Specifically, we ask, *What peer-reviewed research has been published between 2011 and 2021 to support CCI’s claims of MRT’s effectiveness or outcomes?*

**Method**

To explore the robustness of claims that attest to MRT’s effectiveness and integrity, we conducted a scoping review of peer-reviewed publications. To be included in the review, articles must describe an empirical study examining the outcomes or effectiveness of MRT. For the purpose of the review, “empirical studies” were defined as primary research using observation or experimentation to collect and analyze data. All articles in the review were published in English in peer-reviewed journals between 2011 and 2021, following Ferguson and Wormith’s (2013) meta-analysis that reviewed studies published between 1998 and 2010. As previously mentioned, Ferguson and Wormith’s analysis yielded only one peer-reviewed article: Armstrong (2003). To prevent a similar outcome in this review, we used the Ulrichsweb Global Serials Directory to verify the peer-review status of any journals whose peer-review status was not clearly stated on the journal’s website.

**Google Scholar**

Google Scholar is not typically used as a primary database in scoping reviews. Search results can yield “gray” literature and duplicate citations, and cannot be filtered by peer-review publication status. Despite these limitations, we began our systematic search with Google Scholar for two reasons. First, while the MRT website says there are over 200 outcome studies on MRT, CCI does not provide a list of these studies. Instead, they link to the Ferguson and Wormith (2013) article, a cost-benefit analysis of a Drug Treatment Court, a graduate thesis on a group therapy program, and then a Google Scholar search for Moral Reconciliation Therapy.
Second, many social work practitioners are unlikely to have full access to research databases, making Google Scholar an accessible source of information on intervention outcomes and effects.

Using the “advanced search” tool in Google Scholar, the first author searched “Moral Reconciliation Therapy” (in quotations) “anywhere in a text” published between 2011 and 2021, not including patents and citations. This search yielded 669 results, which were subsequently exported into a spreadsheet with the following auto-generated column headings: authors, title, publication, volume, number, pages, year, publisher. Ten texts were removed after deduplication, leaving 659 results.

**Google Scholar Pre-Screening**

Without advanced search tools that can isolate peer-reviewed journal sources, Google Scholar yielded a plethora of gray literature (e.g., symposium remarks, unpublished theses, presentation slides). To mimic more advanced search engine filters, the first author pre-screened the initial yield of 657 unique Google Scholar records, asking, does the text appear to be in a journal and in English? 336 texts were excluded for not having a publication source listed in their Google Scholar citation. An additional 178 texts were excluded for not being published in English or in an academic journal. More detailed reasons for exclusion are described in Table 1, which provides an overview of our pre-screening protocols and reasons for excluding articles from our scoping review.

[Insert Table 1]

**Additional Databases**

Consulting with a Social Work Librarian and a Learning Sciences Librarian, we decided to search additional databases in order to identify publications missed by the Google Scholar
search. As shown in Table 2, we systematically searched 11 databases containing research related to therapeutic interventions with incarcerated people. We used the search term “moral reconation therapy” and limited the results to publications dated 2011 to 2021. When possible, advanced search criteria were limited by publication type (journal), document type (article), language (English), and publication stage (final). If “apply relevant subjects,” “include articles ahead of print,” or “apply equivalent subjects” were auto-checked, we unchecked them. Table 2 identifies these additional databases and the results from our searches within them.

[Insert Table 2]

After results were pulled from Google Scholar and 11 additional databases, we consulted an additional search strategy recommended by Arksey and O’Malley’s (2005) scoping review framework: reference lists. The first author reviewed the bibliographies of the articles describing empirical studies involving MRT in the United States. This strategy identified no new articles.

General Screening Process

Three members of the research team screened the 143 results that met the prescreen eligibility from the Google Scholar search, along with the two additional unique results from Psychiatry Online and Scopus database searches (N=145). Reviewing the full texts, each reviewer first determined if the text was a full-length article describing an empirical study involving MRT in the United States (yes/no). If the text met this first criterion (yes), each reviewer determined if the text described a study examining the outcomes or effectiveness of MRT (yes/no). Reviewers intended to chart additional data for articles that met the second criteria (e.g., randomized controlled trial, sample size, sample demographics). However, no articles met this second criterion.
To increase consistency among reviewers, a subset of texts was scanned in full, with each reviewer independently completing a data charting tool. The reviewers met to discuss discrepancies, adjust charting categories, and standardize reasons for exclusion. Once the data charting tool was finalized, reviewers replicated this process for all 145 results and met to resolve discrepancies. Studies were excluded for the following reasons a) Not studying MRT: mentions MRT (e.g., literature review) but MRT is not the subject or focus of the study; b) Involving MRT: describes a study about MRT but is not examining the outcomes or effectiveness of MRT; c) Larger program including MRT: describes a study evaluating a larger program that includes MRT among other interventions and does not isolate MRT for analysis; d) Commentary or editorial: a commentary or editorial that may or may not relate to MRT; e) Review article: reviews existing literature about MRT.

We synthesized the results of the screening processes into a PRISMA Flow Diagram which provides a visual representation of how citations were reviewed throughout the course of this scoping review. These results, as well as the screening processes that yielded them, are found in Figure 1.

[Insert Figure 1]

Results

Our inclusion criteria for this search were: (1) articles describing empirical studies—primary research using observation or experimentation to collect and analyze data—of MRT and its effectiveness, (2) articles published in English, (3) articles published in peer-reviewed journals, and (4) articles published between 2011 and 2021. Of the 669 articles that were identified, 10 duplicates were removed. To ensure that we identified every research article regarding MRT published between 2011 and 2021, 11 databases were included in the
identification phase using the same protocol as the initial Google Scholar search. Figure 1 details which databases were utilized. Using these alternative databases, 102 duplicate articles from the Google Scholar search results were identified. The identified articles were not removed because they were included in the initial Google Scholar search protocol. These results validate that no other research articles were missing from the initial Google Scholar search and that the 659 articles screened were representative of the available research on MRT between the years of 2011 and 2021. A total of zero articles met the inclusion criteria for this study. Although this is an unfortunate result, multiple themes became apparent from the exclusion criteria that could help the field understand why the evidence base claimed by CCI surrounding MRT’s effectiveness may be inflated. These themes showcase why the descriptor “evidence-based practice” may not always be indicative of scholarly evidence.

**Confounding Variables within Identified Empirical Studies**

When surveying the available research on MRT between 2011 and 2021, our exclusion criteria exposed many confounding variables. Only 12 empirical studies in our review included MRT in some way. Of these 12 articles, none explored the isolated effects of MRT on the service populations studied. Six of the studies included MRT in some way but did not measure the therapeutic effects or outcomes of MRT. For example, these studies explored clinician and client feelings about MRT or the sustainability of the program’s implementation in certain settings. The remaining six empirical articles studied larger programs in which MRT was provided alongside a multitude of other therapeutic interventions. For example, many of these studies explored the effectiveness and outcomes of large “reentry” programs where MRT was being used, but the program’s effects were not isolated when the authors assessed program outcomes or recidivism rates. These 12 studies did not specify whether they were researching specific stages of MRT or
the intervention in its entirety.

**Not Studying MRT**

Most (121 of the 145) screened articles were excluded because they did not assess the outcomes of MRT-based treatment programs. However, because MRT can still be found in the online version of the outmoded National Registry of Evidence-based Programs and Practices previously supported by SAMSHA, authors seem to assume its effectiveness. For example, many of these excluded articles were identified in the screening process because MRT was suggested as a solution to the research questions explored. Another common presentation was evaluative studies, where researchers offered alternative approaches for community based treatment programs where the authors insisted that MRT could be a worthy offering to address potential shortcomings. These mentions were often brief and cited supporting evidence that was published by CCI, CCI affiliates, or the original authors of the MRT program. This suggests that scholars may not be considering how MRT’s status as an evidence based treatment may not inherently prove its replicability or promise as a treatment modality.

**Involving MRT and Larger Programs Including MRT**

Eighteen articles were excluded because they involved MRT but did not directly study its outcomes in isolation (n=9) or explored the outcomes of larger treatment programs that included MRT alongside a buffet of therapeutic offerings (n=9). In these studies, MRT was often considered effective if the broader treatment program had positive results. However, given that MRT was a component of a broader program, it is not possible to make a causal inference about the purported source of these supposed improvements. Stated previously, confounding variables were a concern regarding MRT’s evidence base. However, studies like this are often referenced as support of MRT’s effectiveness. In fact, CCI’s newsletter and proprietary journals often cite
and publish articles that suggest MRT is effective because the large-scale re-entry program it was used in had lower recidivism rates. It is difficult to ascertain from the review of the current literature if MRT is the sole reason these programs have positive effects, because MRT’s effects are not assessed independently of other established interventions or wrap-around services.

Commentaries, Editorials, and Review Articles

Lastly, six articles were excluded in the screening process because they were commentaries, editorials, or review articles that did not study the effects of MRT. Rather, they reviewed the promise or concerns surrounding mandatory treatment populations or general applications of treatment programs and qualitative effects on staff morale. These articles were not specifically seeking to assess the outcomes of any treatment modality and were instead providing new or supporting commentary or perspectives for what practitioners should consider for future work.

Discussion

This scoping review reported on the state of peer-reviewed literature, published between 2011 and 2021, assessing MRT’s effectiveness and outcomes. A systematic search of Google Scholar and 11 additional databases yielded 18 peer-reviewed articles about MRT. Half of these articles described evaluations of larger programs that included but did not isolate MRT. The other half were not concerned with MRT effectiveness or outcomes. Following Ferguson and Wormith’s (2013) meta-analysis on MRT studies published between 1988 and 2010, our findings indicate the Armstrong (2003) article may be the only peer-reviewed research on MRT’s effectiveness or outcomes published in an academic journal between 1988 and 2021.

These findings indicate that MRT does not live up to its evidence-based claims. CCI (n.d.) claims that “over 200 outcome studies have been published on MRT” and that “virtually
all research shows MRT treatment leads to lower recidivism, improvements in personality variables, enhanced treatment compliance, and higher staff satisfaction.” Without further investigation, social work practitioners and students may assume MRT’s evidence base is situated within the peer-reviewed academic literature. Does CCI have an ethical responsibility to amend how they describe the scope and quality of evidence pertaining to MRT? The National Association of Social Workers Code of Ethics (2021) requires the field of social work to base practice on empirical knowledge and to value competence.

**Implications**

These findings should give social workers pause before facilitating and teaching about MRT. Social workers should seek to understand MRT’s treatment goals and modalities and consider how these research findings align with their professional ethics. Before facilitating MRT, practitioners should investigate the evidence base supporting implementation in their particular setting and with their particular population(s). Social work educators might consider MRT for use as a critical case study in the importance of research literacy. Social workers should be prepared to assess the reliability, quality, and rigor of evidence supporting the interventions they use. CCI’s representation of MRT’s research base poses interesting challenges and learning opportunities for social work students learning about social work research.

Future social work research on MRT should address three key areas. First, researchers can supplement this narrow scoping review with a broader inquiry, asking *what do we know about MRT from the peer-reviewed literature?* Second, researchers can assess the effectiveness and outcomes of MRT, ideally in randomized controlled trials, without confounding variables. After the conclusion of our systematic data collection and analysis, Blonigen et al. (2022) published findings on the first-ever randomized control trial of MRT. The authors studied the
risk of recidivism of 341 participants of three mental health residential treatment programs randomly assigned to a “usual care” or “usual care” plus two MRT groups per week. The study found that MRT had no additional effect on reducing the risk of recidivism. Third, researchers can survey the field to assess MRT’s scope of practice. How many social workers are trained or facilitating MRT? How many social work students are at field placements that deliver MRT?

**Limitations**

There are several limitations to our scoping review study. First, a single researcher exported the initial citation list (n=667) from Google Scholar, leaving the potential for undetected technical errors. Second, after exporting citations from Google Scholar, we excluded all citations without an entry in the publication source (e.g., journal name) column auto-produced in the exported spreadsheet. We mitigated the risk of missing an article of interest without a listed publication by replicating our search protocol across 11 additional databases. Third, we organized and analyzed citations manually through Google Sheets instead of using a systematic review program. We mitigated the risks of manual analysis by utilizing multiple reviewers in our screening process. Fourth, while CCI says MRT is delivered in nine countries, this scoping review was limited to articles published in English. Future research could include non-English language articles in the list of identified records. Fifth, it is possible that the list of databases consulted excluded databases containing articles that would meet the review criteria.

Last, the meaning of “evidence-based” can be elusive and unsettled. The power and bias behind the label “peer-reviewed” deserve troubling. Financial and labor investments in intervention programs should not be strictly reserved for those supported by empirical research. We, the authors, have all worked in promising programs that did not have the weight or support of randomized controlled trials or government-sanctioned labels. We want to be clear that the
findings and applications of this scoping review speak to CCI’s own evidence-based claims and not our own beliefs about the politics of evidence.

**Conclusion**

This scoping review provides an investigation into the evidence-based claims made by CCI about Moral Reconation Therapy. We intend to provide a starting point for future research and investigation into the use of MRT. We also hope to encourage students and practitioners of social work to question the validity of evidence that supports the interventions they are asked or mandated to use. Given that the research base for MRT suggests that CCI has embellished its evidence-based claims, future research may be conducted to discover its efficacy and the efficacy of other possible interventions used with similar populations. Ultimately, more research needs to be conducted to determine if MRT should be used in therapeutic settings. The language used to describe ideal participants of MRT reinforces a deficit-based view of many clients of social work. A profession whose body of ethics requires competency is in contradiction with the use of MRT and its lack of evidence for claims made by its creators.

This scoping review hopes to guide the future of social work (e.g., in its treatment of criminal legal-involved persons) and the language used to describe its clientele. The significant bias that has historically been a part of the field of social work is living and breathing within the language of Moral Reconation Therapy. This scoping review exposes this treatment approach as potentially harmful, outdated, and lacking in evidence. The profession of social work should stop supporting interventions with no demonstrable value and a highly dubious evidence base. Researchers and practitioners have an ethical obligation to critically address instances of unsubstantiated claims about interventions and the evidence that supports them.
References


Table 1
Table 1. Google Scholar Pre-Screening Reasons for Exclusion (n = 514)

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<tbody>
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<td>No publication source listed in citation</td>
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<tr>
<td>Book or book chapter</td>
<td>82</td>
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<tr>
<td>HeinOnline as publication source</td>
<td>32</td>
</tr>
<tr>
<td>Not in English</td>
<td>18</td>
</tr>
<tr>
<td>Report (including government reports and privately funded or authored reports)</td>
<td>18</td>
</tr>
<tr>
<td>Student thesis or paper</td>
<td>11</td>
</tr>
<tr>
<td>Conference paper, panel, poster abstract, or proceedings</td>
<td>5</td>
</tr>
<tr>
<td>Presentation slides</td>
<td>4</td>
</tr>
<tr>
<td>Curriculum or manual</td>
<td>3</td>
</tr>
<tr>
<td>Government meeting agenda and/or supporting documents</td>
<td>2</td>
</tr>
<tr>
<td>Magazine article</td>
<td>2</td>
</tr>
<tr>
<td>Notice that the article was published in error</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: If a text had a missing publication source as well as another reason for exclusion (e.g., not in English), it was only counted once, in the missing publication source row.
Table 2

Table 2. Additional Databases and Yields

<table>
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<tr>
<td>APA PsycInfo</td>
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<tr>
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<tr>
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<tr>
<td>Web of Science</td>
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</tr>
</tbody>
</table>

*Note. Original yield was 52. One article was excluded for duplication (within the database yield) and one article was excluded for not being published in English.*
Figure 1

Figure 1. PRISMA Flow Diagram

PRISMA 2020 flow diagram for new systematic reviews which included searches of databases and registers only

Identification of studies via databases and registers

Records identified from:
- Google Scholar (n = 667)
- Psychiatry Online (n = 1)
- Scopus (n = 1)

Records removed/identified before screening:
- Duplicate records removed:
  - Google Scholar (n = 10)
- Duplicate records identified:
  - PubMed (n = 4)
  - APA PsycInfo (n = 4)
  - Social Service Abstracts (n = 8)
  - Criminal Justice Abstracts (n = 2)
  - Sociological Abstracts (n = 9)
  - SocINDEX (n = 3)
  - Psychiatry Online (n = 3)
  - Web of Science (n = 10)
  - Academic Search Complete (n = 7)
  - Scopus (n = 52)
  - Social Sciences (n = 2)

Records screened (n = 659)

Reports sought for retrieval (n = 145)

Reports assessed for eligibility (n = 145)

Studies included in review (n = 0)

Reports of included studies (n = 0)

Records excluded:
- No publication source (n = 336)
- Not published in English (n = 178)

Reports not retrieved (n = 0)

Reports excluded:
- Not studying MRT (n = 121)
- Involving MRT (n = 9)
- Larger program including MRT (n = 9)
- Commentary or editorial (n = 3)
- Review article (n = 3)


*Articles identified were not removed because they were included in the initial google scholar search identification. Other databases were included to ensure the research team identified all available and accessible research articles.