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THE PSYCHOMETRIC PROPERTIES OF AN ANGER MANAGEMENT ROUTINE OUTCOME MONITORING MEASURE

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ABSTRACT

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Jessica L. Randel

This study examined the psychometric properties such as the validity and factor structure of a novel Routine Monitoring (ROM) questionnaire, the Anger Management Outcome Questionnaire (AMOQ), for clients experiencing anger problems. Exploratory factor analysis supported a good model fit for a 4-factor structure (Anger-Out, Anger-In, Verbal Coercion, and General Anger). Confirmatory Factor Analysis supported a bi-factor, the 4-factor model with all items loading on one general factor. The anger questionnaire demonstrated acceptable internal consistency on the scale and subscales, suggesting it is a reliable measure. The content validity was established based on theory and clinical practice. The construct validity of the measure was considered, and it had good convergent validity with other measures of disturbed anger. The ROM measure presented discriminate validity with measures of depression; however, the scale had significant associations with measures of anxiety. While the questionnaire was found to be a reliable and valid ROM measure for monitoring treatment progress for clients presenting with anger management difficulties, further research is required to confirm the factor structure and the AMOQ's ability to detect change over time in clinical groups. The proposal of using a ROM for disturbed anger in a school-based setting is also considered.

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS. ii

LIST OF TABLES. v

LIST OF FIGURES. vii

CHAPTER 1: STATEMENT OF THE PROBLEM. 1

CHAPTER 2: LITERATURE REVIEW. 3

Defining Anger. 3

Anger Impact. 4

Assessing Anger. 5

Routine Monitoring and Feedback in Psychotherapy. 10

The Development of the Anger Management Outcome Questionnaire. 22

CHAPTER 3: STUDY ONE. 26

Factor Structure and Internal Consistency 26

Hypotheses. 26

Method. 26

Results. 28

Discussion. 41

Construct Validity 45

Hypotheses. 45

Method. 45

Results. 47

Discussion. 49

CHAPTER 4: STUDY TWO. 52

Hypotheses. 52
Method 52
Results. 55
Discussion. 60
CHAPTER 5: LIMITATIONS AND FUTURE DIRECTION. 63
CHAPTER 6: IMPLICATIONS FOR SCHOOL PSYCHOLOGY. 65
APPENDIX A: ANGER MANAGEMENT OUTCOME QUESTIONNAIRE. 66
APPENDIX B: NEGATIVE CONSEQUENCES OF ANGER SCALE. 68
REFERENCES. 71

LIST OF TABLES

Table 1. Routine Outcome Monitoring Scale Summary. 22

Table 2. Study 1 Demographic Characteristics of Participants. 27

Table 3. Fit Indices for the One-, Two-, Three-, and Four-Factor Solutions of the AMOQ. 32

Table 4: Total Variance Explained in EFA of the AMOQ 24 items using Parallel Analysis with PFA Extractions. 33

Table 5. Factor Loadings and Uniqueness values for the AMOQ 24 items using a Promax Rotation. 33

Table 6. Cronbach's Alpha for the Four-Factor Solution 24-item AMOQ if Item Dropped. 36

Table 7. Correlation Matrix of the Items on the AMOQ Four-Factor Model Factor 1 Anger-Out Subscale. 37

Table 8. Correlation Matrix of the Items on the AMOQ Four-Factor Model Factor 2 Anger-In Subscale. 37

Table 9. Correlation Matrix of the Items on the AMOQ Four-Factor Model Factor 3 Verbal Coercion Subscale. 38

Table 10. Correlation Matrix of the Items on the AMOQ Four-Factor Model Factor 4 General Anger Subscale. 38

Table 11. AMOQ Four-Factor Model Factor Correlations. 38

Table 12. CFA Model Names with Description of Each Model. 39

Table 13. SEM Maximum Likelihood Model Fit Indices for the 7 CFA Models 41

Table 14. Descriptive Statistics for All Measures Used in Study 1 Construct Validity. . 46

Table 15. AMOQ Total and Subscale Scores Correlated with the BAI, RDSI, Anger Dysfunction Scale, ADS-SF Total Scale, and the ADS-SF Subscale Scores 49

Table 16. Study 2 Demographic Characteristics of Participants. 54

Table 17. AMOQ Total and Subscale Scores Correlated with the OQ-45 Total Scale, the OQ-45 Subscale Scores. 56

Table 18. AMOQ Total and Subscale Scores Correlated with the TOP Total Score and the TOP Subscale Scores. 59

Table 19. Means, Standard Deviations, T values, Degrees of Freedom, and P-values for all Scales for Participants in Study 2 Who Reported Being in Therapy and Participants Who Reported Not Being in Therapy. 60

LIST OF FIGURES

Figure 1. Eigenvalue Scree Plot for Study 1 Factor Analysis. 32

CHAPTER 1: STATEMENT OF THE PROBLEM

Defining and understanding anger is essential for the assessment, diagnosis, and treatment of clients with dysfunctional anger. Despite inconsistencies in the literature, anger can best be understood as an emotional, behavioral, and physiological experience that can result in dysfunctional outcomes and negative consequences. Nevertheless, anger is not its own diagnostic category, impacting the ability to monitor symptoms and plan interventions. Many clients presenting with dysfunctional and disruptive anger often do not score high on anger scales measuring general anger (DiGiuseppe & Tafrate, 2007), suggesting that anger can be situational. Thus, measures that monitor and assess for general trait anger or general distress might not be appropriate for measuring treatment progress for clients presenting with anger management difficulties. Routine outcome monitoring (ROM) measures formally assess the outcomes of psychotherapy, informs the therapist and client on progress, and helps guide treatment to improve the quality of care (Wampold, 2015). Research evidence supports the efficacy of using ROM measures ("Progress Monitoring," 2015); however, the existing ones have largely been designed for clients with internalizing symptoms and do not assess clients' anger problems. Given that the existing progress monitoring tools do not measure anger well, patients with anger problems might not be adequately assessed over the course of treatment.

The Anger Management Outcome Questionnaire (AMOQ) is the first measure to monitor progress for clients with anger management difficulties weekly. This study assessed the factor structure of the AMOQ using exploratory factor analysis (EFA). This study compared the AMOQ scores with other ROM scores. It was hypothesized that the AMOQ would have a small, non-significant correlation with established ROM measures,

and have a high correlation with other valid measures of anger. The study aimed to compare clinical versus non-clinical groups; however, the sample for the clinical group was not large enough to complete analyses. While more research is needed to establish the psychometric properties of the scale, it presents as a promising ROM measure for disturbed anger.

The ROM questionnaire was developed for adults with disturbed anger, but this study considers anger monitoring in children in adolescents. A dialogue is presented regarding the potential need for anger outcome monitoring within a school-based setting, and professional and ethical considerations are reviewed. Implications for the profession of School Psychology and the future of ROM is discussed.

CHAPTER 2: LITERATURE REVIEW

Defining Anger

Anger has been understood as a negative emotion that can lead to outward aggression and violence. However, the lack of progress in defining, diagnosing, and treating anger is evident. It is important to understand and define anger and not let it become the neglected emotion that it has been for decades (Tavris, 1989). DiGiuseppe & Tafrate (2007) reported that the Roman philosopher Seneca (1928) was one of the primary intellectuals to document the harmful and destructive effects of anger. Over thousands of years, anger has not clearly been defined nor understood. Much of the early research on anger had an imbalanced focus on violence and aggression theories with an ambiguity about the study of anger (Averill, 1983). Further, anger has been described collectively with aggression and hostility (Spielberger et al., 1985). With mass media and literature continues to place a biased focus on violent behaviors; however, research on understanding the experienced emotion that can proceed with those violent or aggressive behaviors is scarce.

Despite difficulties in defining anger as a construct and the inconsistency in the research, some of the literature has described anger as a multifaceted construct involving trait tendencies, internal expression, external expression, and anger control (Spielberger, 1999). Anger has been described as a subjective, affective experience or state that can vary in duration, intensity, and frequency that is associated with physiological arousal, behaviors, arousal, and cognitive distortions (DiGiuseppe & Tafrate, 2007; Kassinove & Sukhodolsky, 1995; Parrott & Giancola, 2007). The cognitive component that exists with anger distinguishes it from other emotions such as irritability, violence, or aggression.

Further, anger has been understood as both an internal experience that can be held in and expressed outwards. Many people experience dysfunctional anger and hold it in or confine their expression to verbal expression.

Anger has been described as both a state, fluctuating over short durations of time, and a trait, a stable experience (Deffenbacher et al., 1996; Spielberger, 1988; Spielberger et al. 1983). The state-trait anger theory (Spielberger et al., 1983) describes anger as a trait, suggesting that individuals have differing susceptibilities in the frequency, intensity, and expression of anger (Deffenbacher et al., 1996). It has been predicted that those with higher trait anger show state anger more frequently and intensely (Spielberger, 1988). Anger has also been defined and measured according to trait and state characteristics including Anger-In (tendency to experience but suppress anger-in), Anger-Out (tendency to overtly express anger), Anger-Control (tendency to remain patient and efforts to mitigate outward anger expression), Angry Temperament (differences in experienced anger without provoking situation), and Angry Reaction (differences in reaction to negative situations) scales (Spielberger & Reheiser, 2009). When considering models of disturbed emotions (Power & Dalgleish, 1997; 2016), it may be helpful to consider anger across five areas, including provocation, arousal, cognitive, motives, and behavioral domains.

Anger Impact

Anger is considered one of the most frequent emotions (Scherer & Wallbott, 1994). It has been associated with positive, protective outcomes (Darwin, 1965) and with and negative outcomes, including hostile or aggressive behaviors. In psychiatric outpatient clinics, anger has been reported in close to 50% on clients seeking therapy for

anxiety or depression (Posternak & Zimmerman, 2002). While reports vary, it is estimated that about 8% of the U.S. population experiences inappropriate, intense, or poorly controlled anger, with a higher prevalence in men and young adults (Okuda et al., 2015). Furthermore, anger is inversely related to age, meaning that with age, adults report fewer and less intense anger episodes.

Dysfunctional anger can have a negative impact on emotional control and interpersonal relationships, as up to 10% of anger episodes result in aggressive behaviors (DiGiuseppe & Tafrate, 2007). In the United States, anger has been linked to health problems and cardiovascular risk (e.g., Kitayama et al., 2015; Siegman & Smith, 2013), substance abuse (e.g., Leibsohn et al., 1994), domestic violence (e.g., Eckhardt et al., 2002), interpersonal and social difficulties (e.g., Fischer & Roseman, 2007), and aggression and violence risk (e.g., Novaco, 1994). Frequent and intense anger has also been associated with more negative consequences and less productivity (Deffenbacher et al., 1996). Anger has also been shown to lead to negative consequences within the workplace (e.g., Sloan, 2004). Rage, aggression, and irritability have been associated with intense anger in youth (Stringaris et al., 2018). Importantly, dysfunctional anger is a significant concern in schools, with reports indicating that about 10% of children exhibit aggressive behaviors in school (Lochman & Szcepanski, 1999). Given the potential negative consequences of anger, it is crucial to define and measure dysfunctional anger (Ahmed et al., 2012).

Assessing Anger

Many of the existing anger assessment measures have limited validity in predicting and measuring anger expression (Jasinski et al., 2016). Anger assessment

measures disagree on the domains and characteristics of anger that they measure, and most measures commonly used in practice assess anger as a general trait (DiGiuseppe et al., 2016). Some anger scales were developed to assess anger as an emotional state, while others assess it as a personality trait (Spielberger & Reheiser, 2009). Clinical experience and case studies with anger and anger scales suggest that many clients presenting with dysfunctional and disruptive anger often do not score high on anger scales measuring general anger (DiGiuseppe & Tafrate, 2007). For some people and some experiences and relationships, anger does not act as a trait, suggesting it can be situational. Thus, clients' scores on general anger scales may be lower than expected from their level of dysfunction. This discrepancy indicates that clients presenting with acute anger may not be angry in all situations and that disruptive and dysfunctional anger, that got them to treatment, maybe situation-specific. Thus, measures that assess for general trait anger or general distress might not be appropriate for measuring treatment progress for clients presenting with anger management difficulties.

The State-Trait Anger Expression Inventory-2

The State-Trait Anger Expression Inventory-2 (STAXI-2; Spielberger, 1999) attempts to differentiate between experienced anger, expressed anger, and the control of anger. It has psychometric validity (Eckhardt et al., 2004) and has been validated as a reliable measure for assessing the experience and expression of anger in both clinical and non-clinical populations (Lievaart et al., 2016). It is the most frequently used measure for assessing anger. The measure has subscales that measure state anger (i.e., Feeling Angry, Feel Like Expressing Anger Verbally, and Feel Like Expressing Anger Physically) and subscales that measure trait anger (i.e., Angry Temperament, Angry

Reaction, Anger Expression-Out, Anger Expression-In, Anger Control-Out, Anger Control-In, and Anger Expression Index) (Spielberger & Reheiser, 2009). The State Anger scale assesses the intensity of anger at a specific time, and the Trait Anger scale measures experienced anger over time. Within the Trait Anger Scale, the Anger Expression and Anger Control scales assess anger expression and controlling angry feelings. While the STAXI-2 has been psychometrically supported, it does not measure all aspects of the anger construct (e.g., Schamborg, 2016).

Anger Consequences Questionnaire

The Anger Consequences Questionnaire (ACQ; Deffenbacher, Oetting, Lynch, & Morris, 1996) was developed as a 33-item scale designed to assess the frequency of the negative consequences of anger. The questionnaire was based on Spielberger's (1988) anger expression items and additional items developed from interviewing participants describing their anger experience. The subject pool for the pilot study included a small population of high anger students. The questionnaire items were created based on themes from these interviews. The items described situations where anger lead to negative outcomes and asked participants to rate how often their anger led to negative consequences in the last month (one to four or more). Eight scales were identified, including Physical Fights, Verbal Fights, Damaged Friendships, Property Damage, Hurt Self-Physically, Alcohol Use, Negative Emotions, and Legal/Vocational Difficulties. The ACQ was expanded to 42-items to include Tense/Uptight and Rechless Driving clusters instead of Legal/Vocational Difficulties (Lynch et al., 1998). Hahlen & Martin (2006) again revised the scale to improve factor structure by creating a Negative Emotions to include the Tense/Uptight and the Negative Emotions scale and an

Aggression scale to merge the Physical Fights, Verbal Fights, and Property Damage scales. While the questionnaire has been improved, it has several clinical limitations including having only one item to reflect anger in the workplace and a lack of data from clinical participants (Dahlen & Martin, 2006).

Novaco Anger Scale

The Novaco Anger Scale (NAS; Novaco, 2003) was created to measure anger disposition across cognitive, arousal, and behavioral domains. Additionally, the scale assesses for anger regulation and dysregulation, which considers the environmental context of the anger experience. The scale is based on a clinical framework of normal and abnormal anger, considering the cognitive component of anger expression and reactivity (Novaco, 1994). The self-report measure requires the rater to report the intensity of a response to a provoking situation. The norms were created from a clinical population with a large sample.

The Anger Disorder Scale

The Anger Disorder Scale (ADS; DiGiuseppe & Tafrate, 2004) was created to reflect the latest thinking on assessing disturbed emotions and to address the shortcomings of the ACQ and other measures in assessing anger as a clinical problem. DiGiuseppe and Tafrate based the ADS on the clinical model of disturbed emotions proposed Power and Dalgleish (1997; 2016). They thought that any assessment of clinical, emotional disorders should include questions on key characteristics that cut across each emotion. These include information on; (a) the provoking or triggering stimuli, (b) the cognitions that trigger or co-occur with the emotions, (c) aspects of the emotional experience such as physiological arousal, (d) the motives that the emotion

arouses, and (e) the behavioral tendencies the emotion provokes. Comprehensive anger scales such as the ADS and the Novaco Anger Scale (Novaco, 2003) have from 15 to 18 subscales that reflect these domains of emotions, as they exist in anger.

The ADS consists of 74 items across 18 subscales that cover all five of Power and Dalgleish's domains. Two subscales in the provocation domain included Scope of Anger Provocations and Social Reject. Three subscales representing the arousal domain included Physiological Arousal, Duration of Anger Problems, and Episode Length. The four subscales covered the cognitive domain were Suspiciousness, Resentment, Rumination, and Impulsivity. The subscales within the motives domain included Coercion, Revenge, and Tension Reduction. The behavioral domain included subscales measuring Anger-in or Brooding, In Direct Aggression, Passive Aggression, Physical Aggression, and Relational Aggression. DiGiuseppe and Tafrate (2004) created a short form of the ADS (ADS-SF) that chose the best items from each of the 18 subscales. They identified the best items based on the items that had the highest correlation with subscale, had the highest effect size when measuring the difference between the scale items and clinical and non-clinical groups.

The ADS—Short Form (ADS—SF; DiGiuseppe & Tafrate, 2004) was created by taking one item form each subscale to broadly sample anger domains. The scale consists of 18 items. The ADS—SF items correlated highly with measures of disturbance and distinguished between clinical and non-clinical groups (Charles et al., 2016). The ADS-SF has three factors: Anger-in, Vengeance, and Reactive-Expression. The scale exhibits excellent psychometric validity with high internal consistency and test-retest reliability.

Anger Dysfunction Scale questions

The Anger Dysfunction Scale consists of questions measuring dysfunctions and negative consequences of anger based on a theoretical and clinical framework (see Appendix B). These questions were initially created by DiGiuseppe and Tafrate (2007) as part of the Structured Interview for Anger Disorders (SIAD; Ahmed et al., 2012), a structured interview for dysfunctional anger. The items chosen from the SIAD included those that focused on the negative social, occupational, legal, interpersonal consequences, and substance use, and aggressions consequences of anger. The SIAD was used to identify four different subtypes of dysfunctional anger and was related to several other anger scales (e.g., STAXI-2). DiGiuseppe and Tafrate (2015) found that a self-report version of these items correlated highly with other measures of anger.

Routine Monitoring and Feedback in Psychotherapy

Research has demonstrated that monitoring clients' progress and providing feedback improve therapeutic outcomes and prevents treatment failure (Lambert, 2010). When clinicians gather and provide feedback regarding clients' functioning and growth in treatment, clinically significant positive change occurs that enhance treatment outcomes (Lambert et al., 2001; Lambert & Shimokawa, 2011). Several such progress monitoring inventories have appeared, and they are called Routine Outcomes Monitoring (ROM) measures (Wampold, 2015). Meta- and mega-analytic research reviews support the effectiveness of ROM to both clinicians and clients (Shimokawa et al., 2010). Clinicians using outcome measures throughout treatment not only track client progress but can also make treatment modifications (Hatfield & Olges, 2004) or choose to

implement a different treatment approach. Both client-focused and therapist-centered feedback are essential to monitoring response to treatment (Howard et al., 1996).

Although outcome assessment can be beneficial for client progress and improvement, only a small population of clinicians use formal, standardized outcome measures as a part of their regular practice (Castonguay et al., 2015; Hatfield & Ogles, 2004; Phelps et al., 1998). While clinicians should regularly measure client progress, assessment is typically done informally and objectively, based on client self-report measures (Berking & Wupperman, 2012; Keffer, 2015), client and clinical observation, and clinical judgment. Informal assessment of progress can be subjective, and an emphasis on formal outcome assessment allows clinicians to provide appropriate treatment.

Ethical Considerations of Routine Outcome Monitoring

There are ethical implications for using ROM measures. Clinicians should ensure that patients are receiving the maximum benefit from psychotherapy and using best practices in the treatment approach and assessment (Muir et al., 2019). When considering the ethical principles of psychologists and code of conduct outlined by the American Psychological Association (APA), it is the responsibility of the psychologist to ensure integrity (Principle C) in providing scientifically-justified treatment with clear commitments to maximize treatment and provide accurate treatment (APA, 2002). Further, it is the ethical obligation of psychologists to not only practice an accurate, honest, and truthful scientific approach but also to teach future clinicians to use best-practices as outlined in Section 7 of the APA ethical code. With a plethora of research

supporting the efficacy of ROM, it should be considered as a best practice in providing, tracking, and monitoring therapeutic services.

While a variety of feedback instruments have been developed (Castonguay et al., 2013), not all measures have been reviewed, use empirical data, or are supported through research. A special issue in *Psychotherapy* ("Progress Monitoring," 2015) reviewed seven ROM measures, which are discussed below. These measures are largely designed for clients with internalizing symptoms and do not assess for clients with externalizing symptoms or for anger problems. Additionally, youth ROM assessment were considered, and two outcome questionnaires are reviewed. Anger and aggressive symptoms and behaviors are underrepresented in the existing ROMs, and there appear to be no existing ROM measures that are created to assess progress in the treatment of angry clients. To substantiate this claim, I review the most widely used ROMs. A special issue journal Psychotherapy ("Progress Monitoring," 2015), reviewed the most commonly used ROM measures. These ROM measures were selected for review, each of which is discussed below. Several youth assessments were also examined. Table 1 presents how anger and aggression are represented in these commonly used ROM measures.

The Outcome Questionnaire-45

The Outcome Questionnaire-45 (OQ-45; Lambert et al., 2004; Lambert et al., 2013) is an evidence-based, valid, heavily researched outcome measure. In the brief, 45-item questionnaire, clients assess the frequency of symptoms on a 5-point Likert scale with total scores ranging from 0-180. The feedback process occurs every session; ongoing monitoring allows for continuous measurement of client functioning to assess and modify treatment and to reflect on and adapt clinician behaviors. The subscales

include symptom distress, interpersonal relations, and social role functioning over the past week. Higher scores on the OQ-45 reflect more frequent client reports of symptom distress, interpersonal problems, and social dysfunction, and less frequent symptom reports of positive emotions, experiences, positive relationships, and adaptive role functioning (Lambert, 2015). The OQ-45 does not have a subscale for anger management and only includes one item on the Social Role (SR) scale that addresses anger ("I feel angry enough at work/school to do something I might regret").

The OQ-45 normative data sample included non-patients and patients (Lambert et al., 2013). The non-patient sample was collected from national community members, college students, and business organization workers who were not participating in psychotherapy or taking psychoactive medication. The patient sample was collected from inpatient care, mental health community centers, outpatient clinics, private practice, undergraduate counseling centers, and employee assistance programs. The presenting problems for the non-patient sample were not provided. Substantial research supports the use of the OQ-45 for progress feedback for internalizing symptoms (Shimokawa et al., 2010). Nevertheless, externalizing symptoms, such as those relating to anger and aggression symptoms, are not adequately represented on the OQ-45.

The Partners for Change Outcome Management System

The Partners for Change Outcome Management System (PCOMS; Duncan, 2012) is client-directed and involves both ongoing outcomes progress monitoring and therapeutic alliance measures. The PCOMS assesses client response to treatment and identifies clients at risk of adverse outcomes. Clients rate their distress on three domains of personal, family, and social well-being, and the instrument allows the clinician and the

patient to structure treatment (Duncan, & Reese, 2015). The PCOMS consists of two 4-item scales, which focus on assessing outcomes (i.e., the Outcome Rating Scale [ORS]; Miller et al. (2003) and therapeutic alliance (i.e., the Session Rating Scale [SRS]; Duncan et al., 2003). The PCOMS is administered and discussed in the session, allowing for transparency and discussion regarding progress and treatment goals. Nevertheless, the outcome system is mostly used in mental health clinics and measures general distress (Duncan & Reese, 2015) rather than assessing for change in symptomatology based on presenting problems.

The ORS (Miller et al., 2003) normative data included participants from a non-clinical group and a clinical group. The non-clinical group was composed of graduate students in a masters-level program and therapists and staff from a community family service (CFS) agency; the clinical group data was gathered from adult clients at the CFS (Miller et al., 2003). The presenting problems for the clinical group were not provided. The SRS normative sample included three groups of participants: participants from an outpatient mental health counseling agency with different presenting problems and treatment goals; participants of closed cases from a CFS agency; and participants from a home-based CFS intervention program and from the Family Therapy Associates (FTA) at a university (Duncan et al., 2003). Normative data for the two scales on the PCOMS were gathered from clinical and non-clinical populations. Data were not gathered on the presenting problem for the clinical populations. Thus, it is unknown if the sample included clients with anger management problems. Although client feedback has proven to be important in measuring the effects of psychotherapy, the PCOMS is generally intended to measure change for internalizing symptoms related to general distress.

The Clinical Outcomes in Routine Evaluation Outcome Measure and System

The Clinical Outcomes in Routine Evaluation Outcome Measure and System (CORE-OM and CORE System; Barkham et al., 2001; Evans et al., 2000; Mellor-Clark et al., 1999) is founded on practice-based evidence and clinical theory. CORE-OM consists of 34-item, assessing psychological distress on four scales, including Well-being, Problems, Life functioning, and Risk (Barkham et al., 2015). The measure is only administered pre- and post-treatment with the CORE Therapy Assessment Form and the CORE End of Therapy Assessment Form (Mellor-Clark & Barkham, 2006). On the pre-treatment form, clients rate presenting problems in 14 areas including depression, anxiety, psychosis, personality, learning difficulties, eating disorders, addiction, physical difficulties, trauma, grief, self-esteem, interpersonal conflict, living situation, and work/school (Barkham et al., 2015). While internalizing symptoms are represented in the CORE System, symptoms related to anger or aggression are not represented.

Psychometrically, the CORE-OM general measure of distress correlates with measures of depression (Barkham et al., 2015), demonstrating that the ROM may be most clinically useful in measuring the change in symptoms of depression. Normative data for the CORE System was gathered from non-clinical and clinical samples. The non-clinical sample was collected from students from two different universities and data from therapists, researchers, and researchers' colleagues, family, and friends; the clinical sample was collected from 21 sites providing counseling services with varying theoretical orientations (Evans et al., 2000). The CORE-OM did not use a clinical sample of clients with anger problems and did not have a scale for measuring symptoms related to anger or aggression.

A Collaborative Outcome Resource Network

A Collaborative Outcome Resource Network (ACORN; Brown et al., 2015), and associated ACORN Toolkit, is another ROM tool designed to be used in various behavioral health settings. The measure has different versions and generally examines global distress related to clinical symptoms, social conflict, daily functioning, and substance abuse. The most commonly used version is the Adult Version. This 13-item questionnaire evaluates symptoms related to anxiety, depression, sleep, concentration, social isolation/conflict, and daily functioning/productivity and to assess therapeutic alliance (Brown et al. 2015). Normative data for the ACORN appears on the ACORN wiki site (Brown, n.d.). Questionnaires were completed by community samples in Utah and clinical samples; however, demographic data and diagnoses were not provided for all clients. Of the patients who provided diagnostic information, adjustment disorders, anxiety, and depression accounted for most of the cases. While the ACORN can be helpful for monitoring progress, it is primarily limited to measuring symptoms associated with internalizing disorders and does not provide a scale for measuring symptoms related to anger.

Behavioral Health Measure-20

The Behavioral Health Measure-20 (BHM-20; Kopta & Lowry, 2015) is a 20-item ROM with scales assessing well-being, psychological symptoms, life functioning, and suicidal monitoring; the scale measure distress, life satisfaction, motivation, depression, anxiety, panic, bipolar, eating problems, alcohol/drug use, intimate relationships, social relationships, work/school, and life enjoyment (Kopta et al., 2015). The BHM-20 monitors symptoms within the past two weeks and asks patients to rate

symptoms on a Likert scale from 0 to 4, with lower ratings indicating increased distress. The Psychological Symptoms Scale has 13 items and includes 1 item (5% of the total items) assessing violence risk towards oneself and others.

Normative samples for the BHM-20 were collected from a community sample including adults, not in treatment, undergraduate students not in treatment, and a counseling sample including patients and undergraduate students in outpatient therapy in a women's mental health center (Kopta & Lowry, 2002). Evidence for the ROM as a valid and reliable measure is supported for assessing symptoms related to general well-being and life functioning. Further, concurrent validity was established with scales that intended to assess for distress and interpersonal functioning. Although the BHM-20 has 1 item assessing violence risk, it does not appear to be a valid measure for assessing changes in symptoms related to anger or aggression.

Treatment Outcome Package

The Treatment Outcome Package (TOP; Kraus et al., 2005) is an outcome measure devised to monitor behavioral health treatment progress that can be used in various naturalistic settings with different age groups. It measures pathology across various diagnostic groups (Kraus et al., 2005). The adult TOP has 58 items, answered on a 6-point Likert scale, and assesses 12 symptoms across multiple domains including work performance, sexual functioning, social conflict, depression, panic/anxiety, psychosis, suicidal ideation, violence, mania, sleep, substance abuse, and quality of life (Boswell & Kraus, 2015). The violence scale consists of 4 items, making up 7% of the item content. The TOP also generates a global symptom severity score with higher scores indicating healthier functioning. The normative data sample included a large, clinical sample of

adult outpatient, psychiatric clients, who completed the TOP at intake. The general population samples were drawn from a network of clinicians' friends (Kraus et al., 2005).

The TOP was regularly used at a residential adolescent substance abuse facility, Sundown Ranch, in Canton, Texas, to monitor treatment; outcome reports revealed patterns in poor outcomes in violence and anger (Boswell & Kraus, 2015). Subsequently, the center invested in training in Rational-Emotive Behavior Therapy (REBT) and could track progress using the TOP to support using REBT at the facility (Adelman et al., 2005). The substance abuse facility data supports how the TOP can be used to not only provide treatment feedback but also to determine if a different treatment approach is appropriate. Psychometrically, the TOP violence subscale, including 4 items, displayed convergent validity with the Brief Symptom Inventory (BSI; Derogatis, 1975) Hostility sub-scale (Boswell & Kraus, 2015). Nevertheless, the authors highlight how floor effects for violence are difficult to measure as there is not a clear understanding of the healthy continuum of anger. Thus, the ROM might not accurately measure violence.

The Counseling Center Assessment of Psychological Symptoms

The Counseling Center Assessment of Psychological Symptoms (CCAPS; Locke et al., 2011; Locke et al., 2012; McAleavey et al., 2012) is another standardized ROM with a scale for assessing symptoms related to anger. This ROM was created to be used at intake, throughout treatment planning, and to monitor outcomes on a variety of symptoms (Youn et al., 2015). There is a long and a brief version; the CCAPS-62, has 62 items, and the CCAPS-34 has 34 items. The CCAPS-62 has eight scales measuring symptoms related to depression, generalized anxiety, social anxiety, academic distress, eating concerns, family distress, substance abuse, and hostility. It contains a general

distress index (Locke et al., 2011). Clients rate symptoms from the previous two weeks on a 1 to 4 Likert scale. The scale had good convergent validity with other internalizing scales measuring depression, anxiety, and substance use (Youn et al., 2015). The briefer CCAPS-34 contains seven adapted subscales from the more extended version, with the removal of the family distress subscale (Locke et al., 2012).

The CCAPS-62 was designed and normed to assess clinical outcomes for college counseling centers. Development of the scale and psychometric data were gathered from college students seeking mental health services and undergraduate non-clinical samples (Locke et al., 2011). The Hostility sub-scale consists of 7 items, making up about 11% of the total items on the measure. The scale had good internal consistency reliability with the Trait Anger subscale on the State-Trait Anger Expression Inventory-2 (STAXI-2; Spielberger, 1999), an inventory intended to measure trait anger in adolescents and adults. While the Hostility subscale correlated significantly with the Trait Anger subscale, it also correlated significantly with other reference measures of internalizing disorders, including depression and anxiety (Locke et al., 2011). Further, measuring anger as a trait may not yield responses relating to situational anger.

Outcome Monitoring in Youth

Aggressive behaviors are associated with several childhood externalizing, behavioral disorders. ROMs for youth with anger problems mainly measure aggressive, hostile, and disruptive behaviors as opposed to anger; additionally, many widely used youth measures to assess behaviors across broad domains. For example, the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001) and the Behavior Assessment

System for Children (BASC; Reynolds & Kamphaus, 2004) measure broad disruptive behaviors and do not explicitly measure aggression or anger.

A small number of youth measures exist that measure aggression specifically. One example is the Children's Aggression Scale (CAS; Halpern et al., 2002), which includes a parent and teacher questionnaire to measure the frequency specific aggression. Two other examples are the Overt Aggression Scale (OAS; Yudofsky, 1986), which uses parent and teacher observations to measure anger, and the Modified Overt Aggression Scale (MOAS; Donovan et al., 2000), which utilizes interviewer raters. The OAS and the MOAS measure specific types of aggressive behaviors and have been used in clinical settings. Questionnaires that are used to measure specific aggression in youth are not typically used to monitor change in symptoms across treatment sessions in a clinical setting.

Outburst Monitoring Scale. The Outburst Monitoring Scale (OMS; Kronenberger et al., 2007) was created as a ROM for youth in treatment to measure the change in aggressive behaviors. The 20-item questionnaire is completed by a caregiver and consists of items assessing the frequency and severity of specific aggressive behaviors over the last week. The items were based on the OAS (Yudofsky, 1986) and MOAS (Donovan et al., 2000) categories. To validate the measure, the OMS was given to a clinical and control group ranging from 12-17 years old. The ROM measure was found to be sensitive to change and to be a reliable and valid measure of specific aggression. While the OMS can be a useful tool in monitoring aggressive symptoms, it has not been shown to monitor specific anger, separate from aggression.

The Youth Outcome Questionnaire. The Youth Outcome Questionnaire (Y-OQ; Dunn et al., 2005) is a 30-item self-report ROM for youth ages 12-18. It has a rater form for ages 4-18. The Y-OQ includes items across six subscales including Somatic, Social Isolation, Conduct Problems, Hyperactivity/Distractibility, Depression/Anxiety, and Aggression. The aggression scale includes three items assessing aggression scale, accounting for 10% of the item content. The Y-OQ has been shown to appropriately measure the change in clinical populations seeking treatment. Nevertheless, it does not have a scale that specifically monitors anger in youth.

Routine Outcome Monitoring for Anger

Many people are referred for anger management treatment programs across North America. Do the existing ROM measures have enough content to be useful for progress monitoring to clinicians who run anger management treatments? The content of Table 1 demonstrates that the current ROM measures are not sufficient for clinicians to assess treatment progress and outcomes in clients with dysfunctional anger. Further, DiGiuseppe and Tafrate (2007) have argued that anger should be a separate diagnostic category and that existing diagnostic categories fail to adequately describe anger problems. Also, patients with anger problems are not covered or do not have high levels of diagnoses with other DSM-IV axes I diagnoses (McDermut et al., 2009) or axis II diagnoses (DiGiuseppe et al., 2012). Thus, the symptoms of other diagnoses will not represent anger problems, and new assessment instruments for ROM are needed. Because the current ROM measures do not provide an adequate measure to monitor treatment progress for angry clients, a new instrument to accomplish this purpose is needed.

Table 1

Routine Outcome Monitoring Scale Summary

Scale	Scale Summary				
	Anger Subscale	Number of Items in Total Scale	Number of Items Representing Anger	Percentage of Items Representing Anger	Types of Patients in the Normative Sample
OQ-45	No	45	1	2%	Patients & Non-patients
PCOMS	No	8	0	0%	Clinical & Non-clinical
CORE-OM	No	34	0	0%	Clinical & Non-clinical
ACORN Adult	No	13	0	0%	Clinical & Community
BHM-20	No	20	1	5%	Counseling & Community
TOP Adult	Yes Violence	58	4	7%	Clinical & General
CCAPS-62	Yes Hostility	62	7	11%	College Counseling & Undergraduate Non-clinical
Y-OQ	Yes Aggression	30	3	10%	Clinical & Non-clinical
OMS	Yes Aggression	20	20	100%	Clinical & Non-clinical

OQ-45 (Lambert et al., 2004; Lambert et al. 2013); PCOMS (Duncan, 2012); CORE-OM (Barkham et al., 2001); ACORN Adult Version (Brown et al. 2015); BHM-20 (Kopta & Lowry, 2015); TOP Adult Version (Kraus et al., 2005); CCAPS-62 (Locke et al., 2011; McAleavey et al., 2012); Y-OQ (Dunn et al., 2005); OMS (Kronenberger et al., 2007).

The Development of the Anger Management Outcome Questionnaire

The Anger Management Outcome Questionnaire (AMOQ) was developed for use as a ROM for clients in treatment for anger and aggression problems. It was based on the model of disturbed anger and items from the Anger Disorder Scales (ADS; DiGiuseppe

& Tafrate, 2004). Importantly, while the AMOQ was developed from a trait anger scale, items were added to account for contextual factors of anger.

The Anger Disorder Scale

As described in the literature review above, the ADS consists of 74 items across 18 subscales spanning five domains or characteristics of any disturbed emotion (i.e., provocation, arousal, cognitive, motives, and behavioral domains). The subscales include Scope of Anger Provocations, Social Reject. Physiological Arousal, Duration of Anger Problems, Episode Length, Suspiciousness, Resentment, Rumination, Impulsivity, Coercion, Revenge, Tension Reduction, Anger-in or Brooding, In Direct Aggression, Passive Aggression, Physical Aggression, and Relational Aggression. DiGiuseppe and Tafrate (2004) created a short form of the ADS (ADS-SF; DiGiuseppe & Tafrate, 2004) that would be more practical for research use. The ADS-SF was designed by taking the best items from each of the subscales. The best items were identified as having the largest correlation of all subscale items with the subscale, having the greatest difference between clinical and non-clinical groups of all items in the subscale, having the highest loading on the factor representing the subscale then any item in the subscale. When items were tied for these characteristics, the authors discussed the items and reached a consensus on the best item. The ADS-SF has three factors: Anger-in, Vengeance, and Reactive-Expression. The scale exhibits excellent psychometric validity.

The Anger Management Outcome Questionnaire

The AMOQ (see Appendix A) was developed as the first measure to assess weekly progress for clients with anger management problems (DiGiuseppe et al., 2017; Charles et al., 2016). The AMOQ was developed to have items and covered the domains

identified by Power and Dalgleish (1997; 2016) for determining characteristics of clinical, disturbed emotions, and using the model of anger proposed by the ADS. The items of the ADS-SF served as the basis of the AMOQ. Considering that almost all anger scales include the behavioral dimensions of anger-in and anger-out (DiGiuseppe & Tafrate, 2007), we thought it was theoretically important to aim for an anger-in and an anger-out factor. This meant we need items in the behavioral domain that reflects at least these two behavioral expressions of anger. We also wanted the AMOQ to reflect the higher-order anger dimensions of anger-in and anger-out.

The 24-item measure was largely developed from 18 re-worded items on the Anger Disorder Scale—Short Form (ADS—SF; DiGiuseppe & Tafrate, 2004) to assess anger during the last week across each subscale. The 18 items were written to have a Likert scale that addresses the frequency of the test taker experiencing the item within the last week. DiGiuseppe and colleagues (DiGiuseppe et al., 2017; Charles et al., 2016) added 6 items to reflect contextual aspects of anger that are not included in the ADS—SF. The items in the ADS-SF that reflect Anger out reflected physical aggression towards a person. The authors chose the Anger Disorder Scale (ADS; DiGiuseppe & Tafrate, 2004) to assess physical aggression anger towards objects as Item 19. An item assessing displaced aggression was added to and became item 20. Items 21-23 were added to identify specific anger towards a target (partner, work, others) to expand the situational nature of the respondent's anger. Item 24 was added to measure anger towards self. These additional items were chosen based on clinical experience and client feedback concerning the areas in which they experienced anger that was not assessed by the ADS-SF (DiGiuseppe, 2016).

To validate the AMOQ, the ADS-SF and the AMOQ were initially administered to 100 college students and other normative samples collected through Facebook and the internet (Taboas et al., 2016). The AMOQ had excellent internal consistency, had a single factor, and correlated with the ADS—SF (.85). Data was also collected on 40 new clients seeking therapy for anger using the OQ-45 and the AMOQ. The OQ-45 and AMOQ scores were correlated (.25), suggesting the constructs they assess are related, but they do not measure the same construct. Further, the clinically angry group scored significantly higher on the AMOQ than those in the non-clinical sample. Preliminary data was submitted to exploratory factor analysis (EFA), which yielded a four-factor solution. Nevertheless, the small sample size provided a limitation in the reliability of the factor structure.

CHAPTER 3: STUDY ONE

In the first study, I first explored the psychometric properties of the AMOQ with a much larger sample than used by Toabia et al. (2016). This study explored the factor structure using exploratory factor analysis (EFA) and internal consistency. The internal consistency of the AMOQ total score and subscales was calculated. The reduction of the number of items in AMOQ subscales was considered after this analysis. Then, I assessed the construct validity of the AMOQ total score and subscales by comparing them to other measures of anger, anxiety, and depression.

Factor Structure and Internal Consistency

Hypotheses

I hypothesized that the 24-item scale would load on four factors, based on preliminary data gathered (Taboas et al., 2016). I predicted that the AMOQ total score, and any subscales created from the EFA, would have good internal consistency ($\alpha \geq 0.85$). Finally, it was hypothesized that the removal of items could improve the factor structure.

Method

Participants and Procedures

The sample for Study 1 consisted of 703 ($N = 703$) participants, including college students, a normal, non-clinical sample collected through Facebook and the internet, and clients seeking therapy for anger. While 768 people opened the survey, 65 entered but failed to complete the survey, meaning less than 10% responded to the link but did not complete the survey. One participant did not complete the AMOQ. Less than 3% of the items had missing data. There I used the mean substitution for missing data. The sample

consisted of 308 males (43.80%); 392 females (55.80%); and 1 other (0.10%). The average age of participants was 24.48 (*SD* = 10.44). Two participants failed to report their gender identity. All participants were over the age of 18. The participants were informed of the nature of the study and that participation was voluntary. No obligations were placed upon potential respondents, nor were any inducements employed to recruit the sample. All participants completed a consent form before being presented with any items in the survey. The demographic characteristics of participants in Study 1 appear in Table 2.

Table 2

Study 1 Demographic Characteristics of Participants

	Study 1 Participants	
Characteristic	N	%
Gender		
Male	308	43.80%
Female	392	55.80%
Other	1	0.10%
Total	703	100
Sexual orientation		
Heterosexual	603	85.80%
Homosexual	26	3.70%
Bisexual	57	8.10%
Other	15	2.10%
Level of Education		
High school	333	47.40%
Associate degree	63	9.00%
Bachelor's degree	240	34.10%
Master's degree	48	6.80%
Doctorate degree	17	2.40%
	Mean (*M*)	Standard Deviation (*SD*)
Age	24.48	10.44

Materials

Anger Management Outcome Questionnaire (AMOQ). The AMOQ was initially developed for clients in treatment for anger and aggression problems. It was

based on the model of disturbed anger and items from the ADS—a comprehensive anger scale spanning anger domains. The AMOQ is a 24-item self-report measure to assess anger during the last week. The measure is written on a Likert scale to address the frequency of the test taker experiencing the item over the last week: responses range from: never (1), rarely (2), sometimes (3), often (4), and always (5). Scores range from 24-120.

Data Analysis Plan. I conducted an EFA and reliability analyses to explore the factor structure and internal consistency of the 24-item AMOQ. For the EFA, a parallel analysis was completed on the sample using the JASP software program (JASP Team, 2020). I used SPSS Statistics 26 to confirm the EFA using Principle Axis Factoring (PFA) with a Promax rotation (oblique method) to obtain the statistics on the item factor loading. Reliability analyses were conducted to assess the internal consistency of the resulting factor subscales. Finally, consideration of item removal to improve the factor structure was explored.

Results

Exploratory Factor Analysis

Parallel Analysis. The initial EFA, completed using the JASP software program (JASP Team, 2020), revealed two factors with eigenvalues greater than 1. Yet, when examining the scree plot (see Figure 1), a steep drop in the magnitude of eigenvalues indicated a dominant factor. Further, using the ratio rule of the first to second eigenvalue being no greater than 5 to 1 (Lorde, 1980) or 4 to 1 (Fabrigar et al. ,1999) as an index of unidimensional, the scale appeared to have a dominant factor. Nevertheless, using

eigenvalue ratios can be ambiguous and can under-extract and underpredict factors, specifically as the factor correlations increase (Zopluoglu et al., 2017).

Given the subjective nature of Kaiser's (1960) criterion, Cattell's (1966) scree plot method, and limitations of using the eigenvalue ratio rule, a parallel analysis (Horn, 1965) was performed. The parallel analysis was completed using SPSS. The parallel analysis test compared the data from the generated correlation matrices and compared them to normally distributed random samples from generated data (Ravelle, 2016). The Principle Axis Factoring (PFA) with a Promax rotation (Hendrickson & White, 1964), oblique method, was used to obtain the statistics on the item factor loading. The PFA analysis compared eigenvalue data from the generated correlation matrices and compared then with estimated eigenvalues from generated data (Ravelle, 2016). The Promax rotation (oblique method) was used because of the likelihood that the factors would naturally correlate (Harman, 1976).

Model Fit Indices. One-, two-, three-, and four-factor model solutions were considered, and examination of the fit indices was used to determine the model with the best fit. The JASP EFA program provides the Chi-Square (χ^2) test; the χ^2/df index was calculated from this output. Other fit indices reported by the JASP parallel analysis include the Root Mean Square Error of Approximation (RMSEA), the Tucker-Lewis Index (TLI), and the Bayesian Information Criterion (BIC). The fit indices for the 1-, 2-, 3-, and 4- factor solutions appear in Table 3. All the EFA fit indices support the four-factor model as having the best fit.

Chi-square. When considering the overall model fit, the χ^2 value was considered to evaluate "the magnitude of discrepancy between the sample and fitted covariance

matrices" (Hu & Bentler, 1999, p. 2). The chi-square test is an absolute fit index, so it is a measure that does not rely on comparison to a reference model (Jöreskog and Sörbom, 1993). Given the limitations of the test, including the assumption of multivariate normality (McIntosh, 2006) and sensitivity to sample size (Barret, 2007; Jöreskog and Sörbom, 1993), the normed chi-squared divided by degrees of freedom ratio (χ^2/df) was calculated (Wheaton et al., 1977). While there are varying guidelines and recommendations for an acceptable ratio, a lower χ^2 relative to the degrees of freedom demonstrates a better fitting model (Hooper et al., 2008). Models with χ^2/df index values lower than 2 were considered to be over fitted (Loehlin, 2004; Tabachnick et al., 2007), and models with values lower than 5 were considered acceptable (Hu & Bentler, 1999; Wheaton et al., 1977). Byrne (2012) argues the one must also consider the theoretical relevance in determining the best fitting model. The four-factor solution had the lowest ratio ($\chi^2/df = 3.40$) and fell between the cutoff values, implying an adequate model.

Root mean square error of approximation. The RMSEA analyzes how well the hypothesized model, with optimal parameter estimates, would fit the population covariance (Byrne, 1998). Generally, a lower RMSEA indicates a better fitting model (Hooper et al., 2008), with a value close to 0.06 indicate an adequate model fit (Hu & Bentler, 1999) and values above 0.07 indicating a poor-fitting model (Steiger, 2007). The four-factor model had an RMSEA value of 0.06, the three-factor model had a value of 0.07, the two-factor model had a value of 0.08, and the one-factor model had a value of 0.12. When also considering RMSEA values and confidence intervals, the four-factor solution is the only model that falls within the acceptable interval (0.06-0.07), indicating the best- fitting model.

Tucker-Lewis Index. The TLI, also known as the Non-Normed Fit Index (NNFI), can be used with simpler models. A TLI value ranges from 0 to 1, with values $\geq$ .95 indicating the best fit (Hu & Bentler, 1999). The values on the TLI ranged from 0.82 to 0.96. The one- and two-factor models were considered a poor fit, the three-factor model was acceptable with a value of 0.95, and the four-factor model, with a TLI value of 0.96, was considered the best fitting model.

Bayesian Information Criterion. The BIC is a criterion-based model established within a Bayesian context (Schwartz, 1978). The model with the lowest BIC is considered the best fit (Fabozzi et al., 2014). The model with the lowest BIC was the four-factor model with a value of -586.21.

Variance Explained. The total variance explained (see Table 4) was considered. The extraction method used in the EFA was Principle Axis Factoring (PFA). 63.69 of the variance was accounted for by the one-factor solution, 70.60% of the variance was accounted for by the two-factor solution, 73.72% of the variance was accounted for by the three-factor solution, and 76.59% of the variance was accounted for by the four-factor solution.

Model Fit. When considering the analyses from the EFA, it was concluded that there was a good fit between the four-factor solution and the observed data. The factor loadings were examined, and a criterion of $\geq$ 0.40 was used as a cutoff (Tabachnick et al., 2007). While item 5 did not meet the criteria cutoff, with a loading of 0.38, the item was retained due to its theoretical importance in anger theory. When examining the factor loadings (see Table 5) and the items that contributed to each factor, the theoretical and

clinical framework that the questions were based on were considered. The four factors were labeled: Anger-Out, Anger-In, Verbal Coercion, and General Anger.

Figure 1

Eigenvalue Scree Plot for Study 1 Factor Analysis

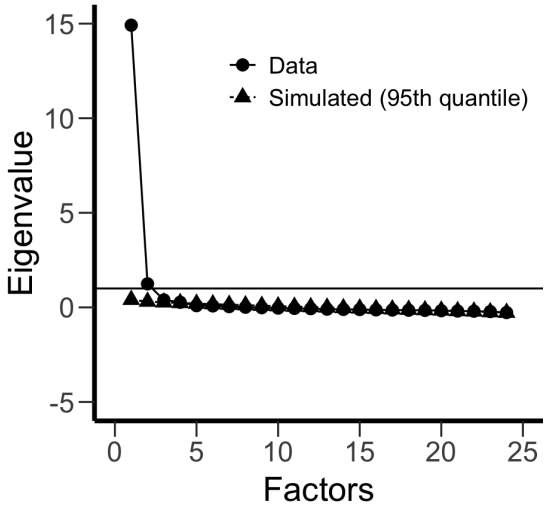

Table 3

Fit Indices for the One-, Two-, Three-, and Four-Factor Solutions of the AMOQ

Model	χ^2	*df*	χ^2/df	RMSEA	90% confidence	TLI	BIC
One-Factor	2917.98	252	11.58	0.124	0.119-0.127	0.824	1266.03
Two-Factor	1346.08	229	5.89	0.084	0.079-0.088	0.919	-155.10
Three-Factor	844.97	207	4.08	0.067	0.062-0.071	0.949	-511.99
Four-Factor	633.09	186	3.40	0.059	0.054-0.064	0.960	-586.21

χ^2=Chi-square Test of Model Fit; RMSEA=Root Mean Square Error of Approximation; TLI = Tucker–Lewis Index; BIC= Bayesian Information Criterion.

Table 4

Total Variance Explained in EFA of the AMOQ 24 items using Parallel Analysis with PFA Extractions

Factor	Eigenvalue	Variance (%)	Cumulative variance (%)
1	15.29	63.69	63.69
2	1.66	6.91	70.60
3	0.75	3.13	73.72
4	0.69	2.87	76.59
5	0.51	2.12	78.71
6	0.47	1.95	80.66
7	0.42	1.76	82.42
8	0.40	1.67	84.09
9	0.38	1.56	85.65
10	0.34	1.41	87.06
11	0.31	1.29	88.35
12	0.30	1.26	89.61
13	0.30	1.26	90.87
14	0.27	1.13	92.00
15	0.26	1.06	93.06
16	0.24	1.02	94.08
17	0.23	.96	95.94
18	0.22	.90	95.94
19	0.20	.83	96.77
20	0.18	.76	97.52
21	0.17	.70	98.22
22	0.15	.63	98.84
23	0.14	.60	99.45
24	0.13	.55	100.00

Table 5

Factor Loadings and Uniqueness values for the AMOQ 24 items using a Promax Rotation

	Factor				
	1	2	3	4	Uniqueness
1. My anger has been a problem for me.	.	.	0.77	.	0.20
2. I have been so angry that I noticed my heart racing.	.	.	0.69	.	0.25
3. I used my anger to control others.	0.63	.	0.44	.	0.20
4. I got angry and lost control of my behavior.	0.40	.	0.56	.	0.19
5. I yelled, screamed, cursed, or insulted people because I got angry.	.	.	0.38	.	0.31
6. I let my anger boil inside, kept it in, and did not show it.	.	0.71	.	.	0.43
7. I got frustrated about things occurring in my life.	.	0.91	.	.	0.34

Table 5

Factor Loadings and Uniqueness values for the AMOQ 24 items using a Promax Rotation

	Factor				
	1	2	3	4	Uniqueness
8. I pushed people or shoved them around because of my anger.	0.81	.	.	.	0.22
9. I got angry because someone made me look bad.	0.55	.	.	.	0.31
10. I could not get out of my mind when I got angry.	.	0.66	.	.	0.26
11. Even when it did not show, my anger continued longer than it had to.	.	0.69	.	.	0.27
12. I felt bitter and thought that I have had more bad breaks than others have.	.	0.64	.	.	0.25
13. I believed that if I let people close to me they will let me down or hurt me.	.	0.70	.	.	0.43
14. I felt angry and wanted to make the tension go away.	.	0.74	.	.	0.34
15. I refused to do the things someone else expected of me because of my anger at him or her.	0.53	.	.	.	0.28
16. I got angry with someone else and tried to find ways to make him or her fail without them knowing.	0.97	.	.	.	0.20
17. I tried to stop others from hanging out with a person I was angry with.	0.99	.	.	.	0.19
18. I wanted to get revenge on a person because of my anger at them.	0.93	.	.	.	0.18
19. I broke or damaged objects due to my anger.	0.79	.	.	.	0.27
20. I have taken my anger out on people other than the person I was angry with.	0.40	.	.	.	0.31
21. I have gotten angry with my romantic partner/ significant other.	.	.	.	0.63	0.34
22. I have gotten angry with other people at home (parents, children, grandparents, roommates).	.	.	.	0.65	0.27
23. I have gotten angry with people at work (bosses, peers, subordinates).	0.45	.	.	.	0.39
24. I have gotten angry at myself.	.	0.72	.	.	0.32

Internal Consistency and Reliability and Consideration of the Removal of Items. The internal consistencies for the four-factor solution was calculated using Cronbach's alpha coefficients for the total score, and the reliability was acceptable (α =

0.96). Internal consistencies were calculated for each factor: factor 1 was acceptable (α =0 .96); factor 2 was acceptable (α =0 .94); factor 3 was acceptable (α = 0.93); and factor 4 was acceptable (α = 0 .81). Cronbach's alpha did not increase with the removal of an item on any of the four factors (see Table 6), and inter-item correlations revealed items correlated highly and significantly with the other items (see Tables 7-10). This indicated that all the items appear to contribute to the factor-derived subscale to which they belong, and there is no statistical advantage to dropping any of the items.

Correlations Among the Four-Factors. As expected, based on theoretical understanding, the four factors are positively correlated with one another with moderate to strong associations (see Table 11). Altogether, it was determined that the four-factor solution appeared to be the best model. Yet, given the first to second eigenvalue ratio, it was clear that a Confirmatory Factor Analysis would help to confirm the model and determine if all of the items load on one general factor with latent variables.

Table 6

Cronbach's Alpha for the Four-Factor Solution 24-item AMOQ if Item Dropped

Factor	Item	Cronbach's α if item is deleted
1	3. I used my anger to control others.	0.96
1	4. I got angry and lost control of my behavior	0.96
1	8. I pushed people or shoved them around because of my anger.	0.96
1	9. I got angry because someone made me look bad.	0.96
1	15. I refused to do the things someone else expected of me because of my anger at him or her.	0.96
1	16. I got angry with someone else and tried to find ways to make him or her fail without them knowing	0.96
1	17. I tried to stop others from hanging out with a person I was angry with.	0.96
1	18. I wanted to get revenge on a person because of my anger at them.	0.96
1	19. I broke or damaged objects due to my anger.	0.96
1	20. I have taken my anger out on people other than the person I was angry with.	0.96
1	23. I have gotten angry with people at work (bosses, peers, subordinates).	0.96
2	6. I let my anger boil inside, kept it in, and did not show it.	0.93
2	7. I got frustrated about things occurring in my life.	0.93
2	10. I could not get out of my mind when I got angry.	0.92
2	11. Even when it did not show, my anger continued longer than it had to.	0.92
2	12. I felt bitter and thought that I have had more bad breaks than others have.	0.93
2	13. I believed that if I let people close to me they will let me down or hurt me.	0.93
2	14. I felt angry and wanted to make the tension go away.	0.93
2	24. I have gotten angry at myself.	0.93
3	1. My anger has been a problem for me.	0.92
3	2. I have been so angry that I noted my heart racing.	0.92
3	3. I used my anger to control others.	0.92
3	4. I got angry and lost control of my behavior.	0.91
3	5. I yelled, screamed, cursed, or insulted people because I got angry.	0.93
4	21. I have gotten angry with my romantic partner/ significant other.	—
4	22. I have gotten angry with other people at home (parents, children, grandparents, roommates).	—

Table 7

Correlation Matrix of the Items on the AMOQ Four-Factor Model Factor 1 Anger-Out Subscale

Item	3	4	8	9	15	16	17	18	19	20	23
3	—										
4	0.81	—									
8	0.79	0.76	—								
9	0.67	0.69	0.72	—							
12	0.64	0.70	0.66	0.68							
15	0.70	0.68	0.72	0.70	—						
16	0.77	0.71	0.76	0.69	0.74	—					
17	0.74	0.71	0.79	0.70	0.70	0.83	—				
18	0.76	0.71	0.78	0.73	0.72	0.82	0.82	—			
19	0.73	0.73	0.77	0.68	0.68	0.73	0.75	0.79	—		
20	0.67	0.71	0.69	0.70	0.68	0.64	0.65	0.71	0.71	—	
23	0.66	0.66	0.63	0.67	0.63	0.65	0.67	0.66	0.64	0.65	—

Pearson r Correlations. All reported p-values significant at the < 0.01 level.

Table 8

Correlation Matrix of the Items on the AMOQ Four-Factor Model Factor 2 Anger-In Subscale

Item	6	7	10	11	12	13	14	15
6	—							
7	0.65	—						
10	0.66	0.66	—					
11	0.66	0.63	0.81	—				
12	0.59	0.64	0.73	0.77	—			
13	0.53	0.58	0.59	0.59	0.67	—		
14	0.60	0.62	0.67	0.68	0.65	0.64	—	
24	0.61	0.69	0.66	0.64	0.61	0.60	0.66	-

Pearson r Correlations. All reported p-values significant at the < 0.01 level.

Table 9

Correlation Matrix of the Items on the AMOQ Four-Factor Model Factor 3 Verbal Coercion Subscale

Item	1	2	3	4	5
1	—				
2	0.80	—			
3	0.74	0.70	—		
4	0.77	0.74	0.81	—	
5	0.69	0.68	0.70	0.76	—

Pearson r Correlations. All reported p-values significant at the < 0.01 level.

Table 10

Correlation Matrix of the Items on the AMOQ Four-Factor Model Factor 4 General Anger Subscale

Item	21	22
21	—	—
22	0.68	—

Pearson r Correlations. All reported p-values significant at the <.01 level.

Table 11

AMOQ Four-Factor Model Factor Correlations

	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1	1.00			
Factor 2	0.78	1.00		
Factor 3	0.90	0.76	1.00	
Factor 4	0.76	0.76	0.71	1.00

Confirmatory Factor Analysis

While the fit indices supported a four-factor solution, it is possible that there is a common factor and four latent factors. The only way to confirm the model's dimensionality was to perform a confirmatory factor analysis (CFA). The AMOQ uses a Likert-format that is commonly submitted to CFA however, Likert data represents an ordinal categorical number system that may have a multivariate, non-normal distribution.

Thus, I chose an estimation procedure that was specifically designed for categorical, ordinal data, and corrects multivariate non-normality.

Model Descriptions. I re-tested the models from the EFA, including the one-, two-, three-, and four-factor models. To reduce cross-loading on factors 1 and 3, I included the item on the factor with the higher loading (i.e., item three on factor 1 and item 4 on factor 3). Additionally, I considered bi-factor models, with one general factor and 2, 3, or 4 latent variables. First, I tested a two-factor model with 2 latent variables, and all items loading on 1 general factor (Model 5). Then I tested a three-factor model with 3 latent variables, and all items loading on 1 general factor (Model 6). Lastly, I tested a four-factor model, with 4 latent variables, and all items loading on 1 general factor (Model 7). The model names and descriptions are presented in Table 12.

Table 12

CFA Model Names with Description of Each Model

Models	Model Description
Model 1	A one-factor model with all items loading on 1 general factor
Model 2	A two-factor model solution with two distinct factors
Model 3	A three-factor model solution with three distinct factors
Model 4	A four-factor model solution with four distinct factors
Bi Factor Models	
Model 5	A two-factor model representing 2 latent variables all items loading on 1 general factor
Model 6	A three-factor model representing 3 latent variables all items loading on 1 general factor
Model 7	A four-factor model representing 4 latent variables all items loading on 1 general factor

Structural Equation Modeling. In structural equation modeling (SEM) on JASP (JASP Team, 2020), the program uses the most common estimation method of Maximum Likelihood (ML). I used R *lavaan* Structural Equation Modeling program (Rosseel, 2012), which can run on the JASP software platform using the ML estimation.

Model Fit Indices. The ML estimation on *lavaan* yielded several fit indices. In Table 13, I report the results for the Chi-Square (χ^2) test, χ^2/df index, the Root Mean Square Error of Approximation (RMSEA), the Bayesian Information Criterion (BIC), and the Expected Cross-Validation Index (ECVI). When considering the model fit indices, I followed the guidelines used in the EFA. When examining the χ^2/df, a lower χ^2 relative to the degrees of freedom demonstrated a better fitting model (Hooper et al., 2008). Models with values lower than 5 were considered acceptable and models with values lower than 1 were considered overfitted. Models 1, 2, 3, 4, and 5 revealed χ^2/df that exceeded acceptable ratio guidelines. Next, I analyzed the fit indices for the remaining models 6 and 7.

A lower RMSEA value indicates a better fitting model, with values close to 0.07, indicating a good model fit (Steiger, 2007). The TLI ranges from 0 to 1, with values $\geq$ .95 indicating a better fit. Additionally, the model with the lowest BIC was considered the best fitting model (Fabozzi et al., 2014). Models 6 and 7 yielded an excellent fit on RMSEA, TLI, and BIC, with Model 7 revealing a slightly better fit.

The Expected Cross-Validation Index (ECVI) was also examined. The ECVI (Byrne, 1994) is an indicator of absolute fit for non-nested models (Schreiber et al., 2006) and is computed for each model. The model with the smallest ECVI value has the greatest potential to be a good model for predicting replications of results in future research. Model 7 had the lowest ECVI value. When considering all model fit indices, Model 7 is clearly the best fitting model.

Table 13

SEM Maximum Likelihood Model Fit Indices for the 7 CFA Models

Model	χ^2	*df*	χ^2/df	RMSEA	90% confidence	TLI	BIC	ECVI
1	2946.96	252	11.69	0.12	(0.123-0.127)	0.82	41467.60	4.33
2	2080.70	251	8.29	0.10	(0.098-0.106)	0.88	40607.89	3.10
3	1654.06	249	6.64	0.09	(0.086-0.094)	0.91	40194.36	2.50
4	1532.86	246	6.23	0.09	(0.082-0.090)	0.91	40092.83	2.33
5	1312.87	225	5.83	0.08	(0.079-0.083)	0.92	40010.50	2.08
6	1055.69	222	4.76	0.07	(0.069-0.073)	0.94	39772.99	1.72
7	971.46	218	4.46	0.07	(0.066-0.075)	0.94	39714.98	1.62

χ^2=Chi-square Test of Model Fit; RMSEA=Root Mean Square Error of Approximation; TLI = Tucker–Lewis Index; ECVI = Expected Cross-Validation Index.

Discussion

The AMOQ was designed as a ROM measure to assess for changes in symptoms related to dysfunctional anger. The ROM questionnaire aimed to measure disturbed emotions related to different dimensions of anger, including provocation, arousal, cognitive, motives, and behavioral domains. The EFA was performed to test two-, three-, and four-factor solutions. Initially, the EFA revealed a two-factor solution when examining eigenvalues greater than 1. The AMOQ was theoretically developed on the higher-order domains of anger-in and anger-out. Thus, those two behavioral expressions of anger were well-represented on the questionnaire. The parallel analysis suggested a four-factor solution. This was possible because additional items were added to the AMOQ reflect the breadth of dysfunctional anger expression beyond the items and characteristics of the ADS-SF. The four-factor solution had the best fit indices using the RMSEA, Tucker-Lewis Index, the χ^2/df, and BIC. With a theoretical and clinical basis, the assumption was made that the factors are correlated. Thus, an oblique, Promax rotation was considered. When analyzing a two- versus three- versus four-factor solution,

significant loadings ($\geq$ 0.40) and complex variables ($\geq$ 0.40) were considered along with additional fit indices.

While the EFA revealed the four-factor solution as the best-fitting model for the 24-item scale, I performed a CFA to confirm the model's dimensionality. I re-tested the one-, two-, three- and four-factor models from the EFA using Structural Equation Modeling (SEM) with the Maximum Likelihood (ML) estimator. I then tested three bi-factor models including two-, three-, and four latent variable models, with all items loading on 1 general factor for each model. When examining the fit indices for the 7 models, the CFA conclusively revealed that Model 7 was the best fitting model. The results of the CFA confirmed that a four-factor model is the best fitting model, with all items loading on one general factor. Next, I analyzed the factor loadings of each item to examine patterns in the items that were loaded on the same factor.

Factor 1: Anger-Out

Factor 1 contained items relating to anger that is expressed outward. These included, I used my anger to control others; I got angry and lost control of my behavior; I pushed and shoved people because of my anger; I got angry because someone made me look bad; I got angry with someone else and tried to find ways to make him or her fail without them knowing; I tried to stop others from hanging out with a person I was angry with; I wanted to get revenge on a person because of my anger at them; I broke or damaged objects due to my anger; I have taken my anger out on people other than the person I was angry with; and I have gotten angry with people at work (bosses, peers, subordinates. The internal consistency did not increase with the removal of an item. All items also loaded on one general factor.

Factor 2: Anger-In

Factor 2 encompassed items reflecting anger that is expressed inward (i.e., I let my anger boil inside, kept it in, and did not show it; I got frustrated about things occurring in my life; I got angry because someone made me look bad; I could not get out of my mind when I got angry; Even when it did not show, my anger continued longer than it had to; I felt bitter and thought that I have had more bad breaks than others have; I believed that if I let people close to me they will let me down or hurt me; I felt angry and wanted to make the tension go away; and I refused to do the things someone else expected of me because of my anger at him or her. The internal consistency of factor 2 did not improve with the removal of any of the items. All items also loaded on one general factor.

Factor 3: Verbal Coercion

Factor 3 included items relating to anger expressed as intimidation or coercion (i.e., My anger has been a problem for me; I have been so angry that I noticed my heart racing; I used my anger to control others; I got angry and lost control of my behavior; and I yelled, screamed, cursed, or insulted people because I got angry). Two items cross-loaded on factor one, a construct relating to anger out ("I used my anger to control others" and "I got angry and lost control of my behavior"). Nevertheless, the removal of those items on both factors did not increase the internal consistency of either scale. One item, "I yelled, screamed, cursed, or insulted people because I got angry" did not meet the criteria of ≤ 0.40. However, the item was close to the threshold (0.38) and was retained due to its theoretical importance in anger theory. All items also loaded on one general factor.

Factor 4: General Anger

The fourth factor included items related to general anger (i.e., I have gotten angry with my romantic partner/ significant other; I have gotten angry with other people at home (parents, children, grandparents, roommates). All items also loaded on one general factor.

Factor Structure and Reliability of the AMOQ

The four dimensions were labeled Anger-Out, Anger-In, Verbal Coercion, and General Anger. The four factors presented with good internal consistency and were positively correlated with one another with moderate to strong associations. It is possible that each factor is failing to appropriately measure distinctive constructs; however, the four-factor model was still considered the model with the best fit.

Future Direction and Limitations

While the AMOQ demonstrates good factor structure, a formal investigation of test-retest reliability has not been examined and would further corroborate the psychometric properties of the scale. To establish criterion validity, future research should seek to gather data on a large clinical pool of clients seeking treatment for dysfunctional anger to demonstrate the AMOQ's ability to distinguish between the general population and clinical samples. Gathering data from a large pool of participants over time would also allow for an analysis of floor and ceilings effects and the AMOQ's sensitivity to change.

Construct Validity

Hypotheses

I hypothesized that the AMOQ would correlate higher with other measures of anger than it would correlate with measures of anxiety or depression. I predicted that the AMOQ would highly and significantly correlate with items measuring dysfunctional anger and the negative consequences of anger.

Method

Participants

The sample used the same participants that were described above.

Materials

Anger Disorders Scale-Short Form. The ADS—SF (DiGiuseppe & Tafrate, 2004) is an 18-item questionnaire assessing dysfunctional anger across five domains on a Likert scale. The scale exhibits excellent psychometric validity with high internal consistency and test-retest reliability.

Beck Anxiety Inventory. The Beck Anxiety Inventory (BAI; Beck et al., 1988) is a 21-item self-report questionnaire assessing for the severity of anxiety. It is a psychometrically valid measure with high internal consistency and has been demonstrated to discriminate between clinically anxious groups versus non-anxious groups.

Reynolds Depression Screening Inventory. The Reynolds Depression Screening Inventory (RDSI; Reynolds & Kobak, 1998) is a quick, 19-item measure assessing the severity of contemporary depressive symptoms to identify those who may be at risk for diagnostic depression. The reviews of this measure in the mental

measurement yearbook concluded that it had demonstrated high reliable and internal consistency with extremely high test-retest reliability. The RDSI also correlates with other valid measures of depression.

Anger Dysfunction Scale Questions. The Anger Dysfunction Scale consists of questions measuring dysfunctions and negative consequences of anger (see literature review above).

Table 14

Descriptive Statistics for All Measures Used in Study 1 Construct Validity

	BAI	**RDSI**	**ANGDYS**	**ADS-SF**	**AMOQ**
N	703	703	703	703	703
Mean	2.822	1.804	2.597	1.954	2.226
Std. Deviation	0.782	0.588	0.864	0.738	1.000
Skewness	1.040	0.961	1.388	1.093	0.865
Std. Error of Skewness	0.092	0.092	0.092	0.092	0.092
Kurtosis	0.215	0.783	1.612	1.317	0.141
Std. Error of Kurtosis	0.184	0.184	0.184	0.184	0.184

Data Analysis

To measure the construct validity, I used correlation coefficients to look at patterns of intercorrelations among measures. I analyzed the convergent and discriminate validity between the AMOQ total score and the ADS-SF, BAI, RDSI, and the Anger Dysfunction Scale by looking at the patterns of intercorrelations among the measure. I also correlated with each AMOQ subscales with the other measures' total scores. Finally, I assessed the convergent and discriminate validity between the AMOQ subscale scores and the ADS-SF subscale scores.

Results

AMOQ Total Score Correlations

The AMOQ total score had positive, significant correlations with all other total scale scores (see Table 11). As predicted, the AMOQ total score had a strong and significant correlation with both the ADS-SF ($r = 0.70$) and the scale of dysfunctional anger ($r = 0.82$), displaying convergent validity. While not initially predicted, the AMOQ had a positive, high correlation with the anxiety scale ($r = 0.68$). The AMOQ had a positive, moderate correlation with the depression scales ($r = 0.57$). However, this correlation was the lowest compared to the other total scale correlations, providing some evidence for discriminant validity.

AMOQ Subscale Scores Correlations

The AMOQ subscale score were then correlated with the total scores for the ADS-SF, BAI, RDSI, and the Anger Dysfunction Scale (see Table 15).

Anger-Out. When considering the AMOQ subscale scores, Anger-Out correlated strongly with the dysfunctional anger scale ($r = 0.85$) and the ADS-SF ($r = 0.67$) indicating convergent validity. While not initially predicted, the AMOQ had a significant, strong correlation with the anxiety scale BAI ($r = 0 .67$). The Anger-Out subscale was moderately correlated with the RDSI ($r = 0.53$).

Anger-In. A similar pattern was observed when examining the Anger-In subscale; it was most highly correlated with the measure of dysfunctional anger ($r = 0.70$) and the ADS-SF ($r = 0.68$). The subscale correlated highly with the anxiety measure ($r = 0 .63$) and was moderately correlated with the depression scale ($r = 0 .58$).

Verbal Coercion. The Verbal Coercion scale was highly and significantly correlated with the Anger Dysfunction scale ($r = 0.81$) and the ADS-SF ($r = 0$ .66). Again, the scale was moderately correlated with the depression scale ($r = 0.52$) and more highly correlated with the anxiety scale ($r = 0.65$).

General Anger. The General Anger scale exhibited a similar pattern of correlations as the other three AMOQ subscales. The subscale was significantly associated with the dysfunctional anger scale ($r = 0.64$) and moderately correlated with the ADS-SF ($r = 0.55$). The subscale was moderately correlated with the BAI ($r = 0.53$). Additionally, the General Anger scale had a low correlation with the RDSI ($r = 0.46$).

AMOQ Total and Subscale Scores Correlated with the ADS-SF Subscale Scores

The correlations between the AMOQ total score and subscale scores and the ADS-SF subscales were examined (see Table 15). Based on the AMOQ scale development, the correlations between the two scales were predicted to be high. The AMOQ total score correlated highly with the ADS-SF Reactive-Expression scale ($r = 0.70$) and was also moderately correlated Vengeance ($r = 0.64$) and Anger-In ($r = 0.63$). When examining correlations between subscales, the strongest associations were between the AMOQ Anger-In and Reactive-Expression ($r = 0.68$), the AMOQ Anger-Out, and the ADS-SF Reactive Expression scales ($r = 0.66$), and the AMOQ Verbal Coercion and the ADS-SF Reactive-Expression subscale ($r = 0.66$).

Table 15

AMOQ Total and Subscale Scores Correlated with the BAI, RDSI, Anger Dysfunction Scale, ADS-SF Total Scale, and the ADS-SF Subscale Scores

	Scale						
AMOQ	BAI	RDSI	ANGDYS	ADS-SF	ADS-SF Anger-In	ADS-SF Vengeance	ADS-SF Reactive-Expression
Anger-Out	0.67	0.53	0.85	0.67	0.62	0.62	0.66
Anger-In	0.63	0.58	0.70	0.68	0.61	0.62	0.68
Verbal Coercion	0.65	0.52	0.81	0.66	0.58	0.61	0.66
General Anger	0.53	0.46	0.64	0.55	0.50	0.50	0.55
Total Score	0.68	0.57	0.82	0.70	0.63	0.64	0.70

BAI (Beck et al., 1988); RDSI (Reynolds & Kobak, 1998); ANGDYS (Anger Dysfunction Scale); ASD-SF (DiGiuseppe & Tafrate, 2004). All reported correlations significant at the 0.01 level.

Discussion

Convergent and Discriminant Validity

As predicted, the AMOQ had positive, significant correlations with the two other measures of dysfunctional anger. The Anger-Out, Anger-In, Verbal Coercion, and General Anger subscales correlated most highly with the dysfunctional anger scale and the ADS-SF. The analyses confirmed that the AMOQ measures the same constructs as other validated measures of dysfunctional anger. The AMOQ was created, in part, from the ADS-SF, so the significant correlation was expected. The additional analysis comparing the AMOQ to a measure of dysfunctional anger validates that it is theoretically measuring what it is intended to measure. When examining the correlations between the AMOQ and the ADS-SF subscales, the AMOQ subscales were most strongly correlated with the ADS-SF Reactive-Expression subscale.

While the AMOQ generally correlated higher with other measures of anger, providing some evidence for discriminant validity, other relationships were observed.

The AMOQ total scale had a positive moderate correlation with the depression scales and a positive high correlation with the anxiety scale. Unexpectedly, a general pattern was identified across all subscales for the AMOQ: the scales had a low to moderate correlation with the depression scale and a moderate to high correlation with the anxiety scale.

Anger and Anxiety

While not initially predicted, a moderate to a strong relationship was observed between the anger and anxiety scales. When examining the subscales, Anger-Out and Anger-In had the highest correlation with the anxiety scale. When examining the scales more closely, there are some commonalities in language on items on both scales. For example, "I got angry and lost control of my behaviors" on the AMOQ Anger-Out subscale and "Fear of losing control" on the BAI; "I let my anger boil inside" on the AMOQ Anger-In subscale and "Feeling hot" on the BAI; and "I have been so angry that I noted my heart racing" on the AMOQ Anger-In subscale and "Heart pounding or racing" on the BAI. Further, other AMOQ items overlap with symptoms associated with anxiety (e.g., "I could not get out of my mind when I got angry").

Theoretically, anxiety can lead to an escape or avoidance of emotions. While anger should be considered its construct, anger can also be expressed as a suppression of emotion and as an avoidance of people or emotions (DiGiuseppe & Tafrate, 2007). Both anxiety and anger can be presented as a lack of engagement with others and withdrawal or avoidance of an emotion, situation, or person. When examining the literature, there is emerging evidence that adults with an anxiety disorder may experience an elevated intensity of anger (Casiello-Robbins & Barlow, 2016). Further, in Study 1, anxiety and

depression were positively and significantly correlated ($r = 0.66$, p-value <.001), suggesting that avoidance unites anger and anxiety. Additionally, clients with anxiety disorders may experience elevated feelings of anger but suppress those feelings.

The relationship between Spielberger's (1999) anger dimension and measures of generalized anxiety have also been examined, with evidence supporting a significant relationship between trait anger and internalized anger and anxiety (Deschênes et al., 2012). Further research suggests that the intolerance of the uncertainty associated with anxiety disorders can mediate the expression of anger inwards in anxious clients (Fracalanza et al., 2014). Other research has described socially anxious clients, who fear social rejection, as becoming resentful towards others due to abstaining from and suppressing assertive or aggressive behaviors (Erwin et al., 2003). While Anger-In may be correlated with anxiety, I do not predict that there is a causal relationship between anger and anxiety. Instead, clients seeking treatment for anxiety may experience increased levels of dysfunctional anger. The high correlation between the AMOQ, specifically the Anger-Out and the Anger-In subscale, and the measure of anxiety was unexpected, and the relationship between the two constructs should be further explored.

CHAPTER 4: STUDY TWO

A second study was completed with an additional pool of participants. With the data gathered in Study 2, I compared the AMOQ to other ROM measures to establish construct validity. I examined the relationship of the AMOQ to the OQ-45 because the OQ-45 appears to be the most widely used ROM measure and is often utilized in ROM research to compare measures. I also choose the TOP, Adult Version ROM measure because it has been found to have excellent factor structure, reliability, and validity and has subscales that assess for anger (see literature review section above). In addition to the scales, participants completed the following questions: Are you presently in psychotherapy? Are you currently in psychotherapy for anger?

Hypotheses

It was predicted that the AMOQ would have a small or non-significant correlation with all the three subscales of the OQ-45. It was expected that the violence and hostility subscale of the TOP measure would have a large and significant negative correlation with the AMOQ and that the TOP measure would have a small or non-significant negative correlation with the AMOQ. Additionally, it was hypothesized that participants who reported that they were in psychotherapy would score higher than participants who were not in treatment. It was hypothesized that participants who reported they were in psychotherapy for anger would score significantly higher than participants who were not.

Method

Participants

The sample for study 2 consisted of 141 ($N = 141$) participants consisting of undergraduate students from the Psychology Department subject pool students from St.

John's University and normative samples collected through anger-related and non-anger related groups through the internet and Facebook. The participants were informed of the nature of the study and that participation was voluntary, and that the study was in English. No obligations were placed upon potential respondents, nor were any inducements employed to recruit the samples. As compensation, undergraduates received .75 hour of research participation credit for participating in this study. While 160 people began the survey, 11 people failed to complete the survey, meaning less than 10% responded and consented to the link but did not complete the survey. 8 participants completed less than 50% of the survey, so they were not included in the final subject pool. One participant did not complete the AMOQ. Given there was no pattern of missing data, the mean substitution was completed. The demographic characteristics of the participants in Study 3 are presented in Table 16. The sample consisted of 35 males (24.80%), 101 females (71.60%), and 1 other (<1%). Participants ages ranged from 18-84 with the mean age ranging between 25-44. Most participants were between 17-34 years old. Of the participants who reported their ethnicity, most participants were white (75.50%) followed by Black or African American (8.70%), Asian (7.20%), and other (6.50%). Participants reported various countries of origin, including the United States, India, Australia, and China.

Table 16

Study 2 Demographic Characteristics of Participants

	Study 3 Participants	
Characteristic	*N*	%
Gender		
Male	35	24.80%
Female	101	71.60%
Other	1	0.70%
Missing	3	2.10%
Total	141	100
Ethnicity		
White	107	75.50%
Asian	10	7.20%
Black or African American	12	8.70%
Other	9	6.50%
Age		
17-24	60	42.50%
25-34	30	21.30%
35-44	10	7.10%
45-54	9	6.40%
55-64	23	16.30%
65-74	5	3.60%
75-84	1	0.70%

Materials

Anger Management Outcome Questionnaire (AMOQ). The AMOQ was initially developed for clients in treatment for anger and aggression problems. It was based on the model of disturbed anger and items from the ADS—a comprehensive anger scale spanning anger domains. The AMOQ is a 24-item self-report measure to assess anger during the last week. The measure is written on a Likert scale to address the frequency of the test taker experiencing the item over the last week: responses range from: never (1), rarely (2), sometimes (3), often (4), and always (5). Scores range from 24-120.

Outcomes Questionnaire-45. The OQ-45 (Lambert et al., 2004; Lambert et al., 2013) is a 45-item from the questionnaire, assessing the frequency of symptoms on a Likert scale. The measure is an established, valid, and well-researched ROM assessment.

Treatment Outcomes Package. The TOP, Adult Version (Kraus et al., 2005) is a 58-item ROM questionnaire, assessing symptoms across multiple domains on a Likert scale. The measure consists of 12 functional domains: work performance, sexual functioning, social conflict, depression, panic/anxiety, psychosis, suicidal ideation, violence, mania, sleep, substance abuse, and quality of life. The outcome measure is designed to monitor behaviors in a naturalistic setting and has a scale for monitoring violence. Higher total scores indicate healthier functioning than lower scores.

Data Analysis. I used SPSS Statistics 26 and JASP (JASP Team, 2020) to calculate the correlations between the measures.

Results

AMOQ Total and Subscale Scores Correlated with the OQ-45 Total and Subscale Scores

The correlations were examined between the AMOQ total score and the OQ total score and subscales (see Table 17). The AMOQ total score correlated moderately with the OQ total score ($r = 0.58$) and was also moderately correlated with the Symptom Distress subscale ($r = 0.56$) and the Interpersonal relations subscale ($r = 0.50$). It had a low correlation with the Social Role functioning subscale ($r = 0.38$). When considering the AMOQ subscales and the OQ total and subscale correlations, all subscales were significantly correlated except for AMOQ General Anger and OQ Social Role ($r = 0.08$, p-value = 0.35) and AMOQ General Anger and OQ Symptom Distress ($r = 0.18$, p-value

= 0.03). All the AMOQ subscale scores were positively and significantly correlated with the OQ Total score, with the strongest relationships between Anger-In and the OQ Total score (r = 0.67) and the weakest association between General Anger and the OQ total score (r = 0.22). All subscales on the AMOQ were most strongly correlated with the OQ Symptom Distress subscale except for General Anger, which was most strongly related to the OQ Interpersonal Relations subscale.

Table 17

AMOQ Total and Subscale Scores Correlated with the OQ-45 Total Scale, the OQ-45 Subscale Scores

AMOQ	OQ-45 Scale			
	Social Role	Symptom Distress	Interpersonal Relations	Total
Anger-Out	0.43*	0.58*	0.50*	0.61*
Anger-In	0.48*	0.66*	0.51*	0.67*
Verbal Coercion	0.26*	0.41*	0.32*	0.41*
General Anger	0.08 (0.35)	0.18 (0.03)	0.31*	0.22*
Total Score	0.38*	0.56*	0.50*	0.58*

OQ-45 (Lambert et al., 2004; Lambert et al., 2013). Pearson r Correlations (p-value).
*p-values significant at the < 0.01 level.

AMOQ Total and Subscale Scores Correlated with the TOP Total and Subscale Scores

The AMOQ total and subscale scores were correlated with TOP total and subscale scores (see Table 18). Correlations were expected to be negative as higher scores on the TOP indicated healthier functioning. The AMOQ total and subscale scores had nonsignificant correlation with the TOP Violence subscale. Anger-Out (r = -0.06, p-value = 0.48), Anger-In (r = -0.04, p-value = 0.67), and Verbal Coercion (r = -0.01, p-value = 0.93) all had negative, nonsignificant correlations with the TOP Violence subscale, while General Anger (r = 0.11, p-value 0.18) and the AMOQ Total scale (r = 0.04, p-value = 0.67) had positive, nonsignificant associations.

When examining the correlations between the AMOQ total and subscale scores with the other TOP total and subscale scores, a general pattern was observed. General Anger did not significantly correlate with any of the scales. Anger-Out, Anger-In, and Verbal Coercion had moderate, but significant, negative associations with many of the subscales with nonsignificant or low relationships typically observed on the Sexual Functioning, Psychosis, Violence, and Substance Abuse scales. The TOP Quality of Life subscale was the only subscale positively, significantly correlated with Anger-Out (r = 0.43), Anger-In (r = 0.51), Verbal Coercion (r =0.33), and the Total AMOQ (r = 0.42). The TOP total score was negatively, significantly correlated with Anger-Out (r = 0.43), Anger-In (-0.49), and the Total AMOQ (r = -0.40).

T-Test Comparing Participants in Psychotherapy to Participants not in Psychotherapy

Participants were asked: Are you presently in psychotherapy? Are you currently in psychotherapy for anger? Independent *t*-tests were calculated between those who reported they were currently in psychotherapy and those who said they were not (see Table 19). Of those who answered the psychotherapy questions (N = 137), 76.64% (N = 105) reported presently not being in psychotherapy, and 23.36% (N = 32) reported being in psychotherapy. The *t*-test was used to determine if the means between those who reported not being in psychotherapy would be significantly (p-value < 0.01) different from (less than) those who reported being in therapy. The *t*-test assumes normal distributions and equal variances between samples. The distributions were assumed to be normal (i.e., skewness and kurtosis values were less than 2). To determine if variances were equal Levene's Test for Equal Variance (Levene, 1960) was used, which tests the

null hypothesis that variances are equal. If the *p*-value was significant (<0.05), then the null was rejected, and equal variance was not assumed.

Participants not in therapy reported significantly lower levels of symptoms across subscale scores and total scale scores on the AMOQ, the OQ-45, and the TOP (see Table 19). The participants not in psychotherapy ($M = 1.75$, $SD = 0.49$) compared to those in psychotherapy ($M = 2.18$, $SD = 0.53$) reported significantly lower levels of dysfunctional anger on the AMOQ Total scale than those in psychotherapy, $t(135) = -4.32$, $p = 0.00$. T-tests could not be calculated between those who reported they were currently in psychotherapy for anger and those who said they were not, as the sample size was too small for those reporting to be in therapy ($N = 1$).

Table 18

AMOQ Total and Subscale Scores Correlated with the TOP Total Score and the TOP Subscale Scores

	TOP Scale												
AMOQ	WORKF	SEXFN	SCONF	DEPRS	PANIC	PSYCHS	SUICD	VIOLN	MANIA	SLEEP	SUBAB	LIFEQ	TOTAL
Anger-Out	-0.30*	-0.18 (0.04)	-0.26*	-0.46*	-0.38*	-0.23 (0.01)	-0.32*	-0.06 (0.48)	-0.41*	-0.29*	-0.21 (0.01)	0.43*	-0.43*
Anger-In	-0.26*	-0.12 (0.16)	-0.29	-0.60*	-0.48*	-0.26*	-0.37*	-0.04 (0.67)	-0.40*	-0.35*	-0.20 (0.02)	0.51*	-0.49*
Verbal Coercion	-0.28*	-0.05 (0.58)	-0.13 (0.14)	-0.34*	-0.25*	-0.17 (0.17)	-0.24 (0.01)	-0.01 (0.93)	-0.34*	-0.14 (0.11)	-0.20 (0.02)	0.33*	-0.29*
General Anger	-0.02 (.85)	-0.14 (0.09)	-0.17 (0.05)	-0.12 (0.17)	-0.09 (0.31)	-0.07 (0.41)	-0.06 (0.46)	0.11 (0.18)	-0.09 (0.29)	-0.06 (0.45)	-0.10 (0.24)	0.11 (0.20)	-0.11 (0.21)
Total Score	-0.25*	-0.14 (0.09)	-0.26*	-0.46*	-0.36*	-0.16 (0.07)	-0.30*	0.04 (0.67)	-0.37*	-0.26*	-0.22 (0.01)	0.42*	-0.40*

TOP, Adult Version (Kraus et al., 2005). WORKF = work performance; SEXFN = sexual functioning; SCONF = social conflict; DEPRS = depression; PANIC = panic/anxiety; PSYCHS = psychosis; SUICD = suicidal ideation; VIOLN = violence; MANIA = mania; SLEEP = sleep; SUBAB = substance abuse; LIFEQ = quality of life. Pearson r Correlations (p-value). *p-values significant at the < 0.01 level.

Table 19

Means, Standard Deviations, T values, Degrees of Freedom, and P-values for all Scales for Participants in Study 2 Who Reported Being in Therapy and Participants Who Reported Not Being in Therapy

Scale	M (SD) not in therapy	M (SD) in therapy	*t*-values	df	*p*- value
AMOQ					
Anger-Out	1.34 (0.35)	1.79 (0.56)	-4.29	38.72	0.00
Anger-In	2.07 (0.80)	2.63 (0.74)	-3.49	135	0.00
Verbal Coercion	1.58 (0.56)	1.97 (0.67)	-3.32	135	0.00
General Anger	2.01 (0.70)	2.34 (0.71)	-2.36	135	0.02
Total	1.75 (0.49)	2.18 (0.53)	-4.32	135	0.00
OQ-45					
SD	1.08 (0.49)	1.61 (0.59)	-5.08	135	0.00
IR	0.86 (0.52)	1.31 (0.48)	-4.36	135	0.00
SR	1.10 (0.39)	1.26 (0.54)	-1.83	135	0.07
Total	1.03 (0.42)	1.47 (0.48)	-4.96	135	0.00
TOP, Adult Version					
WORKF	4.93 (0.57)	4.63 (0.81)	1.95	40.82	0.06
SEXFN	5.54 (0.66)	5.11 (1.18)	1.96	36.97	0.06
SCONF	5.29 (0.76)	4.90 (0.83)	2.51	135	0.01
DEPRS	4.87 (0.89)	4.14 (0.99)	3.96	135	0.00
PANIC	5.36 (0.71)	4.61 (1.11)	3.60	39.08	0.00
PSYCHS	5.59 (0.47)	5.33 (0.54)	2.63	135	0.01
SUICD	5.85 (0.36)	5.67 (0.41)	2.28	46.76	0.03
VIOLN	5.94 (0.36)	5.96 (0.16)	-0.38	135	0.70
MANIA	4.96 (0.71)	4.39 (0.79)	3.85	135	0.00
SLEEP	4.94 (0.91)	4.38 (1.23)	2.36	41.87	0.02
SUBAB	5.81 (0.40)	5.55 (0.66)	2.05	38.12	0.05
LIFEQ	2.44 (0.98)	3.23 (0.83)	-4.09	135	0.00
Total	5.12 (0.37)	4.77 (0.47)	4.37	135	0.00

OQ-45 (Lambert et al., 2004; Lambert et al., 2013); SR = social role; SD = symptom distress; IR = interpersonal relations. TOP, Adult Version (Kraus et al., 2005). WORKF = work performance; SEXFN = sexual functioning; SCONF = social conflict; DEPRS = depression; PANIC = panic/anxiety; PSYCHS = psychosis; SUICD = suicidal ideation; VIOLN = violence; MANIA = mania; SLEEP = sleep; SUBAB = substance abuse; LIFEQ = quality of life.

Discussion

The AMOQ unexpectedly revealed moderate, significant correlations with the OQ-45 total score and all three subscale scores. The AMOQ had the strongest correlation

with the OQ Symptom Distress scale, a pattern that was also seen when examining the correlations between Anger-In, Anger-Out, and Verbal Coercion and the OQ Symptom Distress subscale. When looking at the items on each scale, there is no clear pattern of overlapping content within items. One item on the Symptoms Distress subscale describes irritation, "I feel irritated," which can precede anger (Stringaris, et al. 2018). General Anger on the AMOQ was most strongly related to the OQ Interpersonal Relations subscale. When examining questions on both subscales, there is some overlapping content (i.e., "I get along well with others" and "I have frequent arguments" on the OQ and "I have gotten angry with my romantic partner/ significant other" and "I have gotten angry with other people at home (parents, children, grandparents, and roommates" on the AMOQ). Interestingly, the one item representing anger on the OQ is on the Social Role scale ("I feel angry enough at work/school to do something I might regret"), which had the weakest correlations with the AMOQ subscales. While the AMOQ was not intended to measure general distress, the results from this study indicate that higher scores on the AMOQ may be a general indication of distress across different dimensions.

The AMOQ total and subscale scores were also correlated with TOP total and subscale scores. Interestingly, the AMOQ did not have a significant correlation with the Violence subscale on the TOP. As outlined in the literature review, anger is the emotion that can lead to violence, but anger is not always associated with violence. A limitation of using the TOP Violence subscale is that it only consists of 4 items. To validate the AMOQ as a measure for monitoring dysfunctional anger, it should be administered to a clinical sample along with a measure that assesses for state and trait anger (e.g., STAXI-

2). I hypothesize that the AMOQ will significantly correlate with measures of anger that assess for situational anger.

Associations were observed between the AMOQ and other TOP subscales. Anger-Out, Anger-In, and Verbal Coercion were unexpectedly correlated with many of the TOP subscales. Nevertheless, the subscales with the weakest correlations were the Sexual Functioning, Psychosis, Violence, and Substance Abuse scales. The TOP Quality of Life subscale was significantly, positively correlated with the AMOQ.

When examining the differences between those who reported being in psychotherapy versus those who reported not being in psychotherapy, significant differences were found. Those who reported not being in therapy reported significantly lower symptoms on the AMOQ, the OQ, and the TOP. These results suggest that those who are in therapy score higher on outcome measures than those who are not in psychotherapy. When determining criteria for cutoff values on the AMOQ total score, more clinical data should be gathered.

A significant limitation of study 3 was the sample and the sample size. The sample size ($N = 141$) was a smaller pool of participants than this study intended to collect. Additionally, a large majority of the subject pool was not in treatment for anger.

CHAPTER 5: LIMITATIONS AND FUTURE DIRECTION

The efficacy of ROM is well-establish and recognized throughout the literature as a method of improving treatment outcomes. The AMOQ is the first ROM measure to assess weekly progress for clients with anger management problems. Discussion and limitations are discussed within each study above. Overall, the AMOQ demonstrated good internal consistency and reliability as an outcome measure for monitoring clients seeking treatment for anger. While EFA revealed a four-factor structure, the data for supporting and confirming the model is needed. While convergent validity was established discriminate validity was weaker. The measure significantly correlated with measures of anxiety; further research on anger monitoring tools should consider the relationship between anger and anxiety. To ensure the AMOQ reliably monitors change in clients with anger, a larger clinical sample is needed, and data should be collected over time.

A limitation that was not address in study three includes a potential confounding variable. The COVID-19 Corona Virus pandemic began a month prior to the conclusion of data collection in study three. The sample could be divided into two groups: those who completed the survey before the US national emergency announced on March 13, 2020 (51.70%), and those who completed the survey after (49.3%). While the literature is beginning to identify the significant impact COVID-19 is having on mental health (e.g., Usher, Durkin, & Bhullar, 2020), there is still a great deal of unknown information. Worry has been continuously associated with mental health risks (e.g., Commons, Greenwood, & Anderson, 2016). While cognitive distress and anger may be associated with areas quarantining (Shah et al., 2020), the impact on dysfunctional anger has not

been explored. To monitor dysfunctional emotions and the effect of a national emergency, ROM measures could be used to assess for changes in distress. Specifically concerning anger, monitoring symptoms could present as an important factor in monitoring violence and aggression during unprecedented times.

As with any best practice tools, clinical training will be needed to ensure the ROM measure is being used properly in different settings. Future research should continue to investigate the impact of implementing ROM techniques in training programs as the current research is promising (e.g., Cooper et al., 2019; Peterson & Fagan, 2017) and should continue to support ROM implementation in training programs to continue to promote best practices in clinical and school psychology.

While the focus of this study was on ROM, consideration of best practices for treating anger should continue to be a part of the discussion in defining and assessing dysfunctional anger. Implementing the use of the AMOQ in clinical settings could help to establish the efficacy of different treatment modalities, theories, and techniques. It is the responsibility of clinical and school psychologists to continuously provide treatment in line with best practices and to engage in literature and research that supports scientific evidence for the efficacy of treatment. Monitoring client progress is a valuable tool in providing effective treatment results.

CHAPTER 6: IMPLICATIONS FOR SCHOOL PSYCHOLOGY

It is important for School Psychology to discuss the effects of dysfunctional anger within the school system. Anger is considered the underlying emotion that precedes aggressive, hostile, and violent behaviors. When considering the National Association of School Psychologist (NASP) ethical and professional principles, standards, and guidelines (NASP, 2010), it is a school psychologist's ethical responsibility to be informed and competent on how to keep children safe and to create a safe school climate (Standard I.3.3). Behavioral disruptions are a significant concern within schools, and it is a school psychologist's responsibility to exhibit competency in the pursuit of knowledge that could lead to providing essential school supports (Standard II.1.2). Classroom-based interventions have been supported by anger management intervention (e.g., Kellner, Bry, & Salvador, 2008). Further, behavioral and cognitive interventions for students demonstrating difficulties within the schools have been shown to reduce aggressive behaviors and increase social functioning (Flanagan, Allen, & Henry, 2009). When considering ethical guidelines in school-based interventions, the school psychologist is accountable for actively monitoring progress (Standard II.2.2). To better understand the efficacy of school-based anger interventions, outcome monitoring is necessary. While the AMOQ is developed for adult populations, future research should consider modifying this ROM measure for school-aged populations. Further consideration for training future school psychologists (Standard III.1.1) on routinely using ROM measures is necessary, and doctoral educational experiences should provide supervised training for future psychologists.

APPENDIX A

Anger Management Outcome Questionnaire

	Never	Rarely	Sometimes	Often	Always
1. My anger has been a problem for me.	1	2	3	4	5
2. I have been so angry that I noticed my heart racing.	1	2	3	4	5
3. I used my anger to control others.	1	2	3	4	5
4. I got angry and lost control of my behavior.	1	2	3	4	5
5. I yelled, screamed, cursed, or insulted people because I got angry.	1	2	3	4	5
6. I let my anger boil inside, kept it in, and did not show it.	1	2	3	4	5
7. I got frustrated about things occurring in my life.	1	2	3	4	5
8. I pushed people or shoved them around because of my anger.	1	2	3	4	5
9. I got angry because someone made me look bad.	1	2	3	4	5
10. I could not get out of my mind when I got angry.	1	2	3	4	5
11. Even when it did not show, my anger continued longer than it had to.	1	2	3	4	5
12. I felt bitter and thought that I have had more bad breaks than others have.	1	2	3	4	5
13. I believed that if I let people close to me, they will let me down or hurt me.	1	2	3	4	5
14. I felt angry and wanted to make the tension go away.	1	2	3	4	5
15. I refused to do the things someone else expected of me because of my anger at him or her.	1	2	3	4	5
16. I got angry with someone else and tried to find ways to make him or her fail without them knowing.	1	2	3	4	5

17. I tried to stop others from hanging out with a person I was angry with.	1	2	3	4	5
18. I wanted to get revenge on a person because of my anger at them.	1	2	3	4	5
19. I broke or damaged objects due to my anger.	1	2	3	4	5
20. I have taken my anger out on people other than the person I was angry with.	1	2	3	4	5
PLEASE TURN THE PAGE FOR MORE ITEMS					
	Never	**Rarely**	**Sometimes**	**Often**	**Always**
21. I have gotten angry with my romantic partner/ significant other.	1	2	3	4	5
22. I have gotten angry with other people at home (parents, children, grandparents, roommates).	1	2	3	4	5
23. I have gotten angry with people at work (bosses, peers, subordinates).	1	2	3	4	5
24. I have gotten angry at myself	1	2	3	4	5
Thank You for your cooperation					

Name: _____ Date: _____ Session Number: _____

Circle if this was an **Individual** or **Group** Session Therapist: _____

Instructions: Please read each item carefully and select the choice that best describes how often you experienced and expressed anger **over the *last week, including today***.

Total Score (sum all the items) : _____ Range of Scores 24 to 120.
Norms are being developed

APPENDIX B

Negative Consequences of Anger Scale

1. When you feel angry, rage, fury, hatred, or hostility do you use alcohol or drugs?
   Yes___ (1) No___ (0)
   If so, which substance did you use and how much? _____

2. When you feel angry, rage, fury, hatred, or hostility do you drink or use drugs to make the discomfort and up tight feelings created by the anger go away?
   Yes___ (1)
   No, I do not use alcohol or drugs to make the feels go away ___ (0)
   Does not apply to me ___ (0)

3. When you are angry, rage, fury, hatred, or hostility do you drink or use drugs to help you better express yourself and/or to feel more confident?
   Yes___ (1) No___ (0) Does not apply to me ___ (0)

4. Do you drive fast or do other risky things in a car when you are angry?
   Yes___ (1) No___ (0) Does not apply to me ___ (0)

5. Do you do other risky things when you are angry?
   Yes___ (1) No___ (0)

6. Have any of the following people mentioned to you that you have an anger problem?
   a) Your parent(s): Yes (1) No (0) Does not apply to me _(0)
   b) Your boss or supervisors or teachers: Yes (1) No (0)
   Does not apply to me___(0)
   c) Your friends: Yes (1) No (0) Does not apply to me ___(0)
   d) Your siblings (brothers or sisters): Yes (1) No (0) Does not apply to me ___(0)
   e) Your co-workers or classmates: Yes (1) No (0) Does not apply to me ___(0)
   f) Your classmates: Yes (1)No (0) Does not apply to me ___(0)
   g) Your grandparents, aunts, uncles, or cousins: Does not apply to me ___(0)
   h) Previous lovers, mates, or spouses: Yes(1) No (0) Does not apply to me ___(0)
   i) Your present lover, mate, or spouse: Yes (1) No(0) Does not apply to me ___(0)

7. Have you ever felt sad, or depressed afterward about getting angry, enraged, furious, hateful, or hostile?
   Yes (1) No (0)

8. Have you ever felt guilty about getting angry, enraged, furious, hateful, or hostile?
   Yes (1) No (0)

9. Have you ever felt afraid that you would get angry, enraged, furious, hateful, or hostile?

Yes (1) No (0)

10. Have you ever become so angry, enraged, furious, hateful, or hostile that you wanted to hurt yourself?
    Yes (1) No (0)

11. Have you ever become so angry, enraged, furious, hateful, or hostile that you did hurt yourself?
    Yes (1) No (0)

12. Have you physically hurt another person when you were angry, enraged, furious, hateful, or hostile?
    Yes (1) No (0)

13. Are some people afraid of your anger?
    Yes (1) No (0)

14. When you were younger, did you have a reputation as an angry person?
    Yes (1) No (0)

15. Have you lost friends because of arguments?
    Yes (1) No (0)

16. Has your anger led to problems?
    a) with your parents, siblings, grandparents, or relatives? Yes___(1) No___(0)
    b) with your partner, spouse or lover? Yes___(1) No___(0)
    c) at work or school? Yes___(1) No___(0)
    d) with friends or neighbors? Yes___(1) No___(0)

17. Has your physician, employer, or clergy recommended that you seek counseling for anger related problems?
    Yes___(1) No___(0)

18. Has your physician suggested medication to help you cope with feeling up tight?
    Yes___(1) No___(0)

19. Are there people who have broken off their relationship with you because of your anger, rage, fury, hatred or hostility
    Yes___(1) No___(0)
    If so, approximately how many? _____

20. Are there people who you do not talk to or contact because of your anger, rage, fury, hatred, or hostility at them?
    Yes___(1) No___(0)
    If so, approximately how many? _____

21. Have you lost jobs or business opportunities because of your anger?
    Yes___(1) No___(0)

22. Have your episodes of anger, rage, fury, hatred, or hostility led to problems with the police or criminal justice system?
    Yes___(1) No___(0)
    If so, approximately how many? _____

23. Are there any businesses (restaurants, stores, shops, etc.) that have banned you from the establishment because of your anger, rage, fury, hatred or hostility?
    Yes___(1) No___(0)
    If so, approximately how many? _____

Thank you for your cooperation.

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