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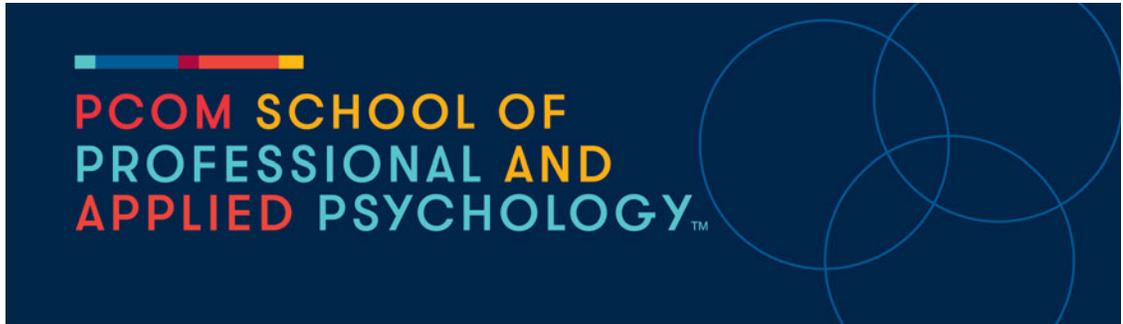
EXAMINING THE PSYCHOMETRIC PROPERTIES OF
THE WEEKLY EMOTIONAL AND FUNCTIONAL SUMMARY

By Brittany Lynn Quimby

Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of

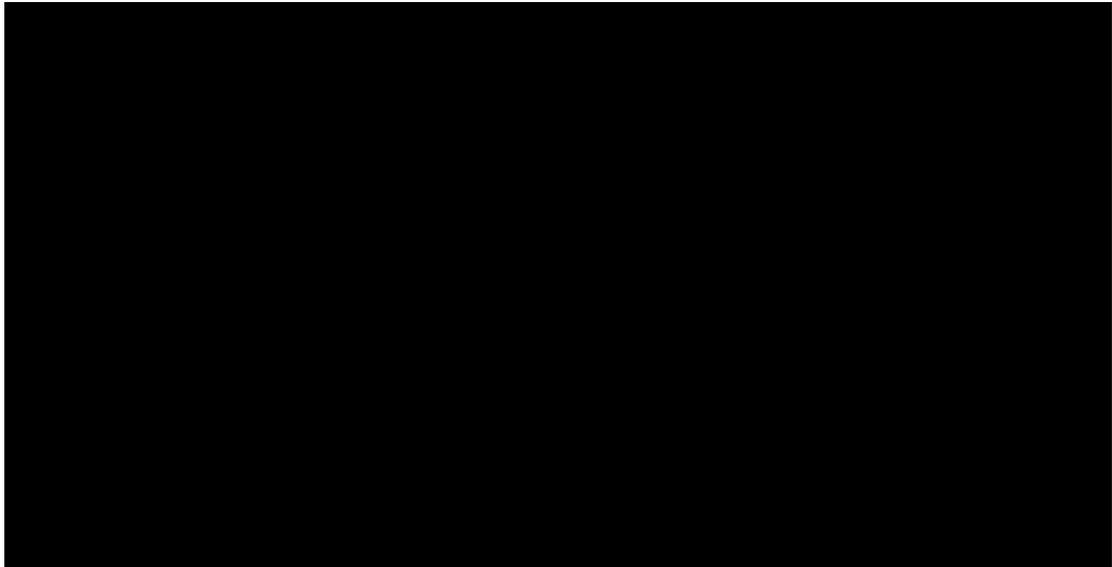
Doctor of Psychology

July 2020



DISSERTATION APPROVAL

This is to certify that the thesis presented to us by Brittany Quimby
on the 7 day of July, 2020, in partial fulfillment of the requirements for
the degree of Doctor of Psychology, has been examined and is acceptable
in both scholarship and literary quality.



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Table of Contents

ABSTRACT	1
CHAPTER 1: INTRODUCTION.....	2
Statement of the Problem	2
Purpose of the Study	5
Research Questions and Hypotheses.....	5
CHAPTER 2: REVIEW OF THE LITERATURE	8
Self-Report Measures	8
The Purpose of Self-Report Measures	8
Issues with Self-Report Measures	13
Self-Report Measures to Date	15
Domains of the Weekly Emotional and Functional Summary	19
Factors of the Weekly Emotional and Functional Summary	20
Additional Factors of the Weekly Emotional and Functional Summary	28
Psychometric Characteristics of Self-Report Measures	30
CHAPTER 3: METHOD.....	33
Design	33
Participants	33
Measures	34
Procedure	40
CHAPTER 4: RESULTS	42
Introduction	42
Demographic Analyses	42

Table 1	44
Table 2	45
Table 3	47
Table 4	49
Hypothesis 1	50
Factor Analysis of WEFS Frequency Domain	50
Table 5	53
Table 6	55
Table 7	56
Factor Analysis of WEFS Intensity Domain	56
Table 8	59
Table 9	61
Table 10	62
Factor Analysis of WEFS Functioning Domain	62
Table 11	64
Table 12	65
Table 13	65
Correlation of WEFS Factors	66
Table 14	67
Hypothesis 2	67
WEFS Construct Validity Analyses	67
WEFS Frequency Positive Mental Health Factor	68
WEFS Frequency Anxiety Factor	69

WEFS Frequency Anger Factor	70
Table 15	72
WEFS Intensity Positive Mental Health Factor	72
WEFS Intensity Anxiety and Depression Factor	74
WEFS Intensity Anger Factor	75
Table 16	77
WEFS Functioning Factor	77
Table 17	79
Hypothesis 3	79
Test-Retest Reliability	79
CHAPTER 5: DISCUSSION	81
Interpretation and Implication	81
Limitations	92
Future Directions	93
REFERENCES	98

ABSTRACT

Self-report questionnaires are used in clinical practice to aid in the process of conceptualizing, diagnosing, planning treatment, and monitoring progress throughout treatment. However, self-report questionnaires can be inconvenient to both clinicians and patients if excessive time is needed to complete and score them. To date, a brief and consolidated self-report questionnaire that measures anxiety, depression, anger, suicidality, homicidality, positive mental health, and functioning does not exist. The primary objective of this study was to evaluate the factor structure and the psychometric properties of the self-report questionnaire, the Weekly Emotional and Functional Summary (WEFS). The study was correlational, using archival data from 153 participants receiving mental health treatment in northeastern Pennsylvania. A principal components factor analysis was conducted to validate the proposed factor structure. Then, standardized measures were used to compare to the WEFS factors. Correlational models were also conducted to assess the stability of the scale over time and to examine the relationship between the factors of the WEFS and other standardized measures in the respective areas. Outcomes indicated that the WEFS is comprised of seven distinct factors (i.e., three across the frequency domain, three across the intensity domain, and one in the functioning domain) and exhibits construct validity, internal consistency, and test-retest reliability. These results suggest that the WEFS demonstrates clinical utility.

Keywords: self-report questionnaire, test construction, principal components factor analysis, construct validity, internal consistency, test-retest reliability

CHAPTER 1: INTRODUCTION

Statement of the Problem

Self-report questionnaires are used in clinical practice to aid in collaboration (Hatcher, 1999; Prescott et al., 2017; Simon et al., 2013), inform treatment (Wolfe & Pincus, 1999; Zimmerman et al., 2008; Zimmerman et al., 2018), measure progress outcomes (Goodheart et al., 2006; Hooke et al., 2018; Prescott et al., 2017), and increase the efficacy of treatment (Zimmerman et al., 2008; Zimmerman et al., 2018). When clinicians regularly gather feedback to evaluate progress outcomes, they can assess whether the treatment goals are being met (Goodheart et al., 2006; Hooke et al., 2018; Prescott et al., 2017). Valid data from a self-report questionnaire provide insight into patients' perceptions of their current levels of functioning and improvement over time. Self-report questionnaires also provide another way for the patient to communicate with the clinician, when speaking about concerns may be uncomfortable or challenging at first.

Patients value collaboration and appreciate the opportunity to share their feedback with clinical practitioners (Hatcher, 1999; Prescott et al., 2017; Simon et al., 2013; Wolfe & Pincus, 1999). Eliciting feedback also helps clinicians incorporate data from another source to supplement their clinical impressions and ensure quality of care by confirming that they are not overlooking problematic areas. As these measures produce quantitative data, they are also used by insurance companies to gauge the efficacy of treatment when evaluating coverage for patients (Nezu et al., 2000). Self-report questionnaires are efficient, systematic, standardized (Wolfe & Pincus, 1999), and cost effective (Garfield et al., 2011).

The amount of time self-report questionnaires take to administer can be a deterrent to regular use in clinical practice. To date, most self-report measures in clinical practice are unidimensional, meaning that they measure only one facet of symptomatology. Some self-report questionnaires, such as the Depression, Anxiety, and Stress Scale (DASS; Lovibond & Lovibond, 1995), measure two facets. However, a consolidated self-report questionnaire that measures frequency and severity of a variety of symptoms, levels of positive mental health, functioning, and suicidality does not yet exist in the field of psychology for outpatient mental health settings. This need is growing in clinical practice because administering numerous self-report measures to assess mental health symptoms and overall functioning is not time efficient and may be exhausting for patients. However, administering a brief questionnaire that encompasses important aspects of several measures would be informative while saving time for therapeutic interventions in session.

The self-report questionnaire in study, the Weekly Emotional and Functional Summary (WEFS), measures anxiety, depression, anger, risk, positive mental health, and overall functioning. These factors were intentionally added to the WEFS because of their relevancy in clinical practice. Specifically, anxiety was chosen as a factor in the measure because it is one of the most prevalent psychological disorders, with one in four individuals experiencing anxiety (Antony et al., 2001; Kessler et al., 1994). Anxiety is not only highly prevalent, but also often undiagnosed and therefore untreated (Antony et al., 2001; Weiller et al., 1998). Depression has been called the “common cold” of psychological disorders because of its prevalence and significance (Nezu et al., 2000). The World Health Organization (WHO) estimates that more than 300 million people will

be diagnosed with depression at some point in their lives (WHO, 2018). Anger was also included, as it is a common symptom indicative of emotional distress (Cella et al., 2010). Suicidality and homicidality should be routinely assessed for the patient's and the public's safety, a duty of mental health professionals (American Psychiatric Association [APA] Ethics Code Standard 4.05b, 2002, Disclosures).

A patient's overall functioning is crucial to measure as well, as it provides information about the severity and level of impairment of the presenting problem. The WEFS also measures positive mental health, an aspect of care that is not commonly assessed in routine care (Trompetter et al., 2017).

Alleviating psychopathology has commonly been misunderstood as an automatic increase in positive mental health (Greenspoon & Saklofske, 2001). However, according to the dual-factor model, positive mental health and psychopathology symptoms are related, but ultimately independent (Lukat et al., 2016; Trompetter et al., 2017). Positive mental health is essential to measure and foster because it has been shown to aid in problem-solving abilities, resilience (Frederickson, 2013), processing adversity (Tugade & Frederickson, 2004), and regulating negative emotions (Teismann et al., 2018). Measuring positive mental health is the first step in helping patients to grow beyond psychopathology toward leading a fulfilling life.

The WEFS accounts for positive mental health, an important but commonly missed aspect of care. If shown to be valid, this measure would be beneficial to the clinical setting because it is brief and consolidates a variety of common symptoms and presenting concerns while also assessing the impact of symptoms by measuring functioning and positive mental health.

Purpose of the Study

The purpose of the proposed archival study was to explore the psychometric properties of the WEFS, an all-encompassing and consolidated scale for use with psychiatric populations, developed by Dr. Jesus Salas. The variables of the WEFS that were measured are as follows: anxiety, depression, anger, risk, positive mental health, and overall functioning. A principal component factor analysis was conducted to examine and validate the proposed factor structure. The validity of the WEFS was assessed by studying the relationship between the WEFS and standardized measures with strong psychometric properties, such as the Beck Anxiety Inventory (BAI), the Quick Inventory of Depressive Symptomatology – Self Report (QIDS-SR), and the Clinical Outcomes in Routine Evaluation- Outcome Measure (CORE-OM). The reliability of the WEFS also was assessed by retesting patients 1 week after the time of intake. This quantitative study used correlational methods, including construct validity, convergent validity, and test-retest reliability, to determine the psychometric properties of the WEFS self-report measure for use in clinical settings.. If the measure is shown to be valid and reliable, it can be used in outpatient mental health settings as a valuable tool to help clients feel understood and listened to, to aid in collaboration, to inform treatment, and to measure progress over time.

Research Questions and Hypotheses

Does the Weekly Emotional and Functional Summary (WEFS), developed by Jesus Salas, accurately measure anxiety, depression, anger, risk, positive mental health, and overall functioning in psychiatric populations? Does the WEFS exhibit strong

psychometric properties, such as construct validity, internal consistency, and test-retest reliability?

Hypothesis 1

It is hypothesized that the items of the WEFS will cluster together to create factors that measure anxiety, depression, anger, risk, positive mental health, and functioning, as shown through a principle component factor analysis.

Hypothesis 2

To assess for convergent validity, it is hypothesized that the WEFS will be correlated with standardized measures in each of the six factors.

(a) The WEFS's anxiety factor will be negatively correlated with standardized self-report measures of anxiety, including the Beck Anxiety Inventory (BAI) and the PROMIS Emotional Distress Anxiety, Short Form, and positively correlated with the negative affect subscale of the Positive Affect and Negative Affect Schedule (PANAS).

(b) The WEFS's depression factor will be positively correlated with standardized self-report measures of depression, including the Quick Inventory of Depressive Symptomatology, Self-Report (QIDS-SR); the PROMIS Severity Measure for Depression, Adult; and the negative affect subscale of the PANAS.

(c) The WEFS's anger factor will be positively correlated with a standardized self-report measure of anger, including the PROMIS Emotional Distress Anger, Short Form, and the negative affect subscale of the PANAS.

(d) The WEFS's risk factor will be positively correlated with a standardized self-report measure of risk, including the risk dimension of the Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM).

(e) The WEFS's positive mental health factor will be positively correlated with a standardized self-report measure of positive mental health, including the well-being dimension of the CORE-OM, and with the positive affect subscale of the PANAS.

(f) The WEFS's functioning factor will be negatively correlated with a standardized self-report measure of functioning, including the functioning dimension of the CORE-OM.

Hypothesis 3

It is also hypothesized that the WEFS will display test-retest reliability after a 1-week retest period, further demonstrating the psychometric properties of the measure for use in clinical settings.

Overall Rationale

A consolidated, yet brief, self-report measure would aid in collaboration, inform treatment, measure progress outcomes, increase the efficacy of treatment, and improve efficiency. If shown to be valid and reliable, the WEFS is hypothesized to enhance these aspects of care through routine use in clinical settings.

CHAPTER 2: REVIEW OF THE LITERATURE

Self-Report Measures

Self-report measures are the most common type of psychological measures that assess narrowly defined characteristics of functioning (Kazdin, 2003). Self-report measures evaluate actions and private experiences, such as psychological symptomatology. They tend to be more face valid and transient, rather than obscure and indirect. The format of self-report measures can vary, including true-false, multiple-choice, fill-in, and rating scales (Kazdin, 2003). Owing to the multifaceted nature of clinical problems, self-report measures were not developed as the sole measurement for diagnostic purposes. Rather, they were intended to complement other diagnostic tools and clinical impressions to diagnose and monitor progress.

Purpose of Self-Report Measures

When conceptualizing, diagnosing, planning treatment, and monitoring progress, clinicians use various sources of data to gather a comprehensive understanding of each patient. These valuable sources of data include clinical tools clinicians review regarding their understanding of the case, as well as measures the patient completes, such as self-report measures. Accurately measuring psychological symptomatology leads to purposeful and targeted treatment. The integration of reliable and valid clinical tools can improve the accuracy of diagnosing and inform treatment, further increasing efficacy (Bar-Kalifa et al., 2016; Hannan et al., 2005; Wolfe & Pincus, 1999; Zimmerman et al., 2018).

Self-report measures offer unique, quantitative data. Gathering information from patients in this way not only aids in the measurement of symptoms, but also enhances the

therapeutic alliance by valuing the patient's involvement (Wolfe & Pincus, 1999). Self-report data come directly from the source and are quantifiable measurements of progress outcomes (Lambert et al., 2001; Lambert et al., 2002; Lambert, Hansen, & Finch, 2001; Nezu et al., 2000; Prescott et al., 2017; Wolfe & Pincus, 1999; Zimmerman et al., 2008; Zimmerman et al., 2018). Self-report questionnaires provide clinicians with data that cannot be gathered from another source (Wolfe & Pincus, 1999), as patients know best how they are feeling. These measures are also valued because they help provide clinicians with information to assess whether patients are meeting their goals in therapy.

Treatment protocols recommend the use of self-report questionnaires to measure progress during the course of treatment (APA, 2010; Harding et al., 2011; National Collaborating Centre for Mental Health, 2009; Trivedi et al., 2006; Zimmerman et al., 2018). Routine outcome monitoring is now recognized by evidence-based practices as a beneficial tool in treatment (Peterson & Fagan, 2017). In fact, routine outcome monitoring has been shown to improve therapeutic outcomes by recognizing and addressing patients who are not progressing through therapy, as patients do not improve at the same rate (Goodheart et al., 2006; Peterson & Fagan, 2017). Identifying patients who are not on track during therapy can help a clinician to understand or prompt patients for clarification to determine why they are not progressing or to evaluate what is inhibiting them from meeting their treatment goals (Simon et al., 2013).

Assessing progress outcomes throughout the therapy process can benefit patients and assist in meeting treatment goals by providing clinicians with quantifiable data that allow them to determine whether patients are deteriorating in therapy or staying on track (Goodheart et al., 2006; Hooke et al., 2018). Bar-Kalifa et al. (2016) and Hannan et al.

(2005) noticed that therapists were not as accurate in predicting patients who were deteriorating in therapy without the use of quantitative data. Being able to measure and understand obstacles to treatment through the information gathered on a self-report questionnaire saves time in session to address these challenges and modify treatment (Zimmerman et al., 2018).

Self-report questionnaires provide a standardized measure of quantitative data (Lambert et al., 2001; Lambert et al., 2002; Lambert, Hansen, & Finch, 2001; Nezu et al., 2000; Prescott et al., 2017; Wolfe & Pincus, 1999; Zimmerman et al., 2008; Zimmerman et al., 2018). Other healthcare professionals, such as physicians, measure patient progress through quantitative methods with blood pressure, weight, and heart rate. Quantitative measures can also be applied to clinical practice when measuring symptoms, functioning, and even positive mental health (Zimmerman et al., 2008). For example, gathering only qualitative data in session by asking, “How have you been lately?” can lead to inaccurate and subjective judgments of progress (Zimmerman et al., 2018). Quantitative measures not only provide a baseline for functioning, but also demonstrate improvement over time in a standardized way. Providing quantitative data allows for an appropriate comparison to previous levels of functioning that qualitative data cannot offer with as much precision (Lambert et al., 2001; Lambert et al., 2002; Lambert, Hansen, & Finch, 2001; Nezu et al., 2000; Prescott et al., 2017; Wolfe & Pincus, 1999; Zimmerman et al., 2008; Zimmerman et al., 2018).

The use of self-report measures in routine clinical practice minimizes clinician bias and reduces the possibility of missing information and of underestimating the severity of symptoms (Wolfe & Pincus, 1999; Zimmerman et al., 2018). Providing

quantifiable measurements directly from the source minimizes clinician bias, resulting in more accurate depictions of the patients' perceptions of their symptoms and current levels of functioning. Incorporating this additional source of information can assist clinicians in developing a comprehensive case conceptualization.

Specific questions on self-report measures relating to symptomatology and overall functioning aid in information recalled by the patient and can reduce the chances of missing details about which the patient may not have previously thought (Stone et al., 1999). Fayers and Machin (2013) analyzed meta-analyses on clinician ratings and patient ratings in relation to progress outcomes and found that the two ratings differed most of the time. In fact, the clinicians in the study tended to overestimate or underestimate their patients' quality of life specifically (Fayers & Machin, 2013). Assessing data from the patient and integrating them with the clinician's diagnostic impression offer more precision when diagnosing and planning treatment. Data from the patient can complement the other diagnostic tools. Self-report measures were not intended to replace clinical interviews or diagnostic protocols, but rather to be integrated to provide a holistic view of the patient from multiple sources (Wolfe & Pincus, 1999).

Self-report questionnaires are also advantageous to clinical practice because they are time efficient, cost-effective (Weissman & Bothwell, 1976; Wolfe & Pincus, 1999; Zimmerman et al., 2008; Zimmerman et al., 2018), and provide a standardized way to demonstrate progress to insurance companies (Zimmerman et al., 2018). Patients can complete the self-report questionnaire in the waiting room prior to an appointment, saving time in session for interventions (Zimmerman et al., 2018). However, self-report measures should be brief to not overwhelm and exhaust the patient (Zimmerman et al.,

2008). Self-report measures provide a wealth of information at low cost as well (Weissman & Bothwell, 1976; Wolfe & Pincus, 1999; Zimmerman et al., 2008; Zimmerman et al., 2018). Many patients use insurance companies as a way to cover mental healthcare. Insurance companies may require feedback regarding a patient's progress throughout treatment as evidence for the need of coverage. Self-report measures can provide insurance companies with clear, standardized, and quantitative measurements of progress (Nezu et al., 2000; Zimmerman et al., 2018).

Gathering a comprehensive understanding of a patient's case informs and increases the efficacy of treatment (Goodheart et al., 2006; Wolfe & Pincus, 1999; Zimmerman et al., 2008; Zimmerman et al., 2018). Gathering detailed updates of symptomatology from session to session can inform treatment and enhance therapy outcomes (Zimmerman et al., 2008). Simply asking generic questions or eliciting a vague update on the patient's level of depression, for example, does not yield as detailed a response as would asking specific questions regarding symptomatology, especially for patients with chronic mental health conditions for which they may not notice small improvements initially. Assessing detailed progress from week to week regarding mental disorder symptoms and positive mental health can help the clinician to tailor treatment to meet the patient's unique needs and goals, thereby increasing efficacy (Goodheart et al., 2006; Hooke et al., 2018; Zimmerman et al., 2008). Collaborating on the various steps of treatment can aid in the efficacy of treatment and empower patients to take a vital role in their progress (Wolfe & Pincus, 1999).

Issues with Self-Report Questionnaires

Using self-report questionnaires in clinical settings to gather progress outcomes and to monitor treatment can be useful to clinicians (Hooke et al., 2018). However, common issues need to be considered when constructing and administering self-report questionnaires. These measures take time to administer and score (Peterson & Fagan, 2017), they can provide inaccurate data as a result of distortions (Kazdin, 2003; Stone et al., 1999), and responses can vary and be influenced by the wording and ordering of items (Kazdin, 2003).

The Weekly Emotional and Functional Summary (WEFS) seeks to address the critique that self-report questionnaires are too time consuming. Requiring patients to complete various self-report measures to gather data on multiple variables likely would be time consuming and regarded as an inconvenience. The WEFS offers a time-efficient solution by assessing multiple variables in one brief, consolidated measure that is also easy to score. Implementing routine use of the WEFS can provide the previously stated benefits while decreasing the likelihood of patients becoming exhausted by completing only one measure versus multiple measures each session. Additionally, the WEFS can be completed in the waiting room prior to the patient's appointment, as it is easy to administer and understand. Completing a single parsimonious measure reduces the patient's exhaustion and complaints regarding completing multiple forms every week and saves time in session for therapeutic interventions (Zimmerman et al., 2018).

Another issue of self-report measures to consider is that they do not provide accurate data because patients tend to report based on either desiring to make themselves appear better than they are or on overreporting to appear worse than they are (Kazdin,

2003; Kline, 2015; Stone et al., 1999). Depending on patients' motives, they may respond in line with social desirability, be inconsistent with their responses, report what may not be true, or exaggerate their responses (Kazdin, 2003). Some patients present to therapy with a need for approval, so they may try to respond in ways that are consistent with what they believe their clinicians would like to see. Social desirability in administering self-report questionnaires can be expressed by acquiescence in true-false items. On the other hand, some patients may be mistrustful initially and endorse items in the middle to guard their true feelings.

To address this issue, patients may not accurately portray their current state of mental health. However, patients underreporting or overreporting may still be considered diagnostically relevant. For example, what function does underreporting or overreporting serve for patients? How can patients' perceptions of their symptoms in relation to clinicians' impressions be addressed in therapy? Clinicians can incorporate their diagnostic impressions and clinical skills to the patients' perceptions to address if the patients are accurately reporting or to hypothesize why they may not be.

Self-report measures may generate inconsistent results because of wording, format, or ordering of items (Kazdin, 2003). Patients may misunderstand the wording of an item. Also, the format in which items are presented can influence responses, such as the tendency to endorse "true" to items regardless of content as a way of attempting to agree with the clinician. Although the impact in which items are ordered has not been extensively studied, Kazdin (2003) recommended that standardized measures be organized in a consistent way such that subscales and domains follow a structured and coherent pattern.

Despite these issues properly used self-report measures can offer a valuable source of information to clinicians (Wolfe & Pincus, 1999; Zimmerman et al., 2018). Self-report questionnaires complement data gathered to create a comprehensive diagnostic picture by providing another source of information that is quantitative and standardized (Lambert et al., 2001; Lambert et al., 2002; Lambert, Hansen, & Finch, 2001; Nezu et al., 2000; Prescott et al., 2017; Wolfe & Pincus, 1999; Zimmerman et al., 2008; Zimmerman et al., 2018). Self-report measures were not created to replace clinical skills and diagnostic impressions; rather, they were created to aid in diagnosing and informing treatment (Kazdin, 2003; Stone et al., 2000; Wolfe & Pincus, 1999). Offering this valuable source of information allows clinicians to understand the patients' views of their current state of mental health and then to incorporate those views with the clinicians' diagnostic impressions (Stone et al., 2000; Wolfe & Pincus, 1999).

Studies have compared clinician ratings and patient ratings on self-report questionnaires and revealed that they differed at times. The clinicians in one study tended to overestimate or in some cases underestimate their patients' quality of life (Fayers & Machin, 2013). Although clinicians differing with their patients regarding the severity of the patients' problems may not always occur, these findings suggest that eliciting patients' subjective views is still valuable because patients know themselves best (Stone et al., 1999; Wolfe & Pincus, 1999).

Self-Report Measures to Date

Currently, self-report questionnaires tend to be unidimensional, meaning that they measure one variable, or bidimensional, meaning that they measure two variables, such as the Depression, Anxiety, and Stress Scale (DASS; Lovibond & Lovibond, 1995).

Although these various self-report questionnaires are valid, reliable, and useful for clinical settings, they do not address the criticism of self-report questionnaires taking too much time to administer.

Peterson and Fagan (2017) surveyed clinicians to better understand why they were not using self-report measures, despite the vast array of research supporting their use. Clinicians frequently reported that they did not want to burden their patients each week (Peterson & Fagan, 2017). Self-report measures burdening patients would be understandable if patients were asked to complete multiple measures or long measures each week. The development of a consolidated and brief measure would address this concern in clinical practice.

Many self-report questionnaires to date do not measure both the intensity and the frequency of symptomatology. Rather, many measures assess either the severity of symptoms or the frequency with which each symptom occurs over a given week. Evaluating both aspects of symptomatology allows the clinician to see progress in the symptoms' levels of distress and their frequency. This comprehensive approach can be helpful when assessing progress because patients may still be experiencing symptoms that are fairly frequent but not as distressing as they previously were. For example, patients may still be worrying throughout the day but may be better able to shift their attention, as indicated by progress in therapy. The opposite could be true of other patients whose frequency of worrying throughout the day is decreasing, but the content of each worry is still distressing. Gathering specific data on symptomatology can inform treatment and help the clinician to tailor each session to be the most beneficial for the patient.

Additionally, many self-report questionnaires to date do not measure functioning and positive mental health (Keyes, 2005; Keyes, 2007; Lukat et al., 2016; Suldo & Shaffer, 2008), two vital components in informing treatment and generating goals. Overall functioning is crucial in understanding the level of impairment patients' symptoms are causing. Additionally, positive mental health and psychopathology have been misunderstood as interrelated (Greenspoon & Saklofske, 2001; Keyes, 2005, Lukat et al., 2016; Rashid, 2009; Suldo & Shaffer, 2008; Teismann et al., 2018; Trompetter et al., 2017), such that as psychopathology is reduced, positive mental health automatically increases. However, research points to these two concepts as being related but ultimately independent (Greenspoon & Saklofske, 2001; Keyes, 2005; Lukat et al., 2016; Rashid, 2009; Suldo & Shaffer, 2008; Teismann et al., 2018; Trompetter et al., 2017).

The dual-factor model emphasizes that positive mental health is separate from psychopathology (Greenspoon & Saklofske, 2001; Keyes, 2005; Lukat et al., 2016; Rashid, 2009; Suldo & Shaffer, 2008; Teismann et al., 2018; Trompetter et al., 2017), such that clinicians should also be fostering positive mental health in their patients to help them reach their full potential. Bringing patients to baseline functioning is not enough; rather, focusing on goals toward increasing positive mental health should also be included in the treatment plan to help patients self-actualize and grow beyond negative symptoms (Fava & Ruini, 2003; Trompetter et al., 2017). A standardized and quantitative measurement of a patient's level of positive mental health is necessary to assess baseline functioning and progress throughout treatment (Keyes 2005; Keyes, 2007; Lukat et al., 2016; Suldo & Shaffer, 2008).

Positive mental health is highly correlated with problem-solving abilities, such that an individual who possesses a high level of positive mental health is better able to approach challenges in life and consider various solutions as opposed to those with low levels of positive mental health (Frederickson, 2013; Teismann et al., 2018; Tugade & Frederickson, 2004). Individuals with a healthy well-being are more resilient in the face of adversity, better regulate their emotions, and are more autonomous than those with low levels of positive mental health (Frederickson, 2013; Tugade & Frederickson, 2004; Teismann et al., 2018). Perhaps increasing patients' positive mental health repertoires can enhance their confidence and abilities in using the skills and techniques they learned in therapy to overcome adversity in the future.

The Clinical Outcomes in Routine Evaluation - Outcome Measure (CORE-OM; Evans et al., 2002) assesses problems/symptoms (12 items), functioning (12 items), subjective well-being (four items), and risk (six items). It demonstrates high internal consistency (0.75 - 0.95) and high test-retest reliability (0.87-0.91) for each dimension. However, the CORE-OM does not follow a coherent structure of items, nor does it include agenda setting, intensity ratings, or meaningful norms to interpret scores. Owing to the CORE-OM not following a coherent structure of items, it takes more time to complete and score. Owing to the inefficiency in scoring, this measure may also produce more errors. To mediate this concern, the CORE-OM provides software for entering items to track progress. Although this tool may be viable for clinicians, it poses additional expenses to clinicians and requires further indirect patient hours. Additionally, the CORE-OM appears to adequately measure positive mental health and functioning, but

may lack in the cognitive aspect of symptomatology, as the items tend to focus on physiological symptoms.

Domains of the Weekly Emotional and Functional Summary

The WEFS is composed of three distinct domains, or subscales: frequency, intensity, and functioning. The domains are deemed distinct based upon the content within, as well as in some rating-scale differences. Each domain has factors within that together create a holistic, comprehensive, and concise way of gathering patient data.

Frequency

The first domain measures how often a given symptom occurs. The frequency domain includes the following factors: anxiety, depression, anger, positive mental health, and risk. Assessing the frequency of symptoms helps the clinician to monitor progress. Understanding how often a given symptom has occurred over the previous week, in relation to significant life events that may have occurred or any medication changes, allows the clinician to assess the effect of various factors in the patient's life. Gathering these data at the beginning of each session can enhance efficiency by prioritizing problematic symptoms and contributing to agenda items in the session.

Intensity

The second domain measures the severity of a given symptom for the individual. The intensity domain includes the following factors: anxiety, depression, anger, positive mental health, and risk. Most self-report questionnaires to date provide information relating either to frequency or to intensity. Not many self-report questionnaires to date record both. Gathering both the frequency of symptoms and the intensity gives the clinician more information on the patient's progress. For example, the patient may still be

experiencing the same amount of worrying and physiological symptoms of anxiety; however, the intensity may be going down while practicing certain therapeutic skills learned in session. Gathering only one aspect of symptomatology may lead to misleading information. Evaluating the intensity and severity of symptoms allows the clinician to document progress and tailor treatment.

Functioning

Finally, functioning is a single domain and factor that measures the degree to which an individual can perform well in terms of responsibilities and maintain relationships while experiencing mental health symptoms. Low scores in the functioning domain can also measure functional impairments, a criterion in the APA's (2013) *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*) for assessing clinical severity of symptoms. This domain and factor are described in detail later.

Factors of the Weekly Emotional and Functional Summary

The WEFS is unique from other self-report questionnaires in that it encompasses multiple facets of mental health, including positive mental health and overall functioning in various areas of life. Clinicians using this measure can gather a comprehensive understanding of patients' progress in multiple areas from week to week. The factors intentionally included in the WEFS are anxiety, depression, anger, risk, positive mental health, and functioning.

Anxiety

Anxiety disorders are characterized by excessive fear and related behavioral disturbances (APA, 2013). Fear, in comparison to anxiety, is an adaptive response to a real or perceived threat, whereas anxiety is the response to anticipatory real or perceived

threats. Anxiety disorders may differ depending on the stimuli or situation individuals fear and their behavior or response (APA, 2013). Anxiety disorders include a cognitive component, such as worrying; a behavioral component, such as avoidance or escaping feared situations; and a physiological component, such as restlessness (Leahy et al., 2012).

Anxiety was a crucial factor to include and measure in the WEFS because it is seen frequently in clinical practice, and its inclusion helps the clinician to better differentiate between stress and anxiety. As previously stated, an estimated one in four individuals experience clinical levels of anxiety (Antony et al., 2001; Kessler et al., 1994). Even with the high rates of anxiety disorders, such diagnoses can often go undiagnosed as a result of normalizing worrying (Leahy et al., 2012); therefore, symptoms can go untreated (Antony et al., 2001; Weiller et al., 1998). Therefore, initial assessment and continual measurement of levels of anxiety in patients are important because of how common anxiety is, how misunderstood it can be, and its high levels of comorbidity among other psychiatric disorders (Leahy et al., 2012).

The current study operationally defines and measures anxiety by higher scores on the following WEFS items: worried, afraid/scared, restless, overwhelmed, and ashamed. To validate the questions on the WEFS measuring anxiety, two self-report measures are used for comparison to ensure that the cognitive, behavioral, and physiological components of anxiety are evaluated. The Beck Anxiety Inventory (BAI; Beck et al., 1988; Beck & Steer, 1990) is widely used in clinical practice and research settings to assess level of anxiety specifically related to physiological symptoms, such as sweating or an increased heart rate when worried, as well as cognitive symptoms (Beck et al.,

1988; Beck & Steer, 1990). This measure was specifically chosen for the study because of the profound psychometric properties of the measure and its frequent use.

To assess the validity of the anxiety symptoms items of the WEFS, the Patient-Reported Outcomes Measurement Information System's (PROMIS) Emotional Distress Anxiety, Short Form (PROMIS Health Organization, 2008-2012; Pilkonis et al., 2011) was used as a comparison. The National Institutes of Health (NIH), a United States academic institution, funded this group of researchers under the NIH Roadmap for Medical Research Initiative to develop more accurate patient-reported outcomes for a variety of settings, including research, mental health, and healthcare. PROMIS created a self-report measure to assess symptoms, functioning, and health-related quality of life. Through waves of testing, PROMIS was able to narrow down the number of items on each self-report to include only the most vital criteria with research to endorse them. Under the mental health category, self-report measures for emotional distress, cognitive functioning, and positive psychological functioning were created. Under the emotional distress category, anxiety, depression, negative psychosocial illness impact, substance, and anger were developed. PROMIS worked with the APA to include these measures in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; APA, 1994) and *DSM-5* (2013). The PROMIS self-report measures, specifically the emotional distress category, exhibit promising psychometrics, making it a viable option for the purpose of this study.

Depression

Depressive disorders share common characteristics of sadness, empty feelings, irritability, and negative thought patterns (APA, 2013). Criteria for depressive disorders

account for and differentiate general levels of sadness, grief, and bereavement (APA, 2013). Patients are diagnosed with depressive disorders when their negative thought patterns, physiological symptoms, behaviors, and emotions are outside the normal response to a stressor. According to the cognitive model, depression is characterized as negative thoughts about the self, others, and the future (Leahy et al., 2012), as well as a lack of reward from the environment (Leahy et al. 2012). These pervasive thoughts are believed to negatively impact physiological symptoms (e.g., fatigue), behaviors (e.g., isolation), and emotions (i.e., sadness and emptiness).

When developing the WEFS, depression was a crucial factor to include and measure because of its prevalence in clinical practice and its ability to better differentiate between sadness and depression. As previously stated, depression has been called the “common cold” of psychological disorders because of its prevalence and significance (Nezu et al., 2000). With approximately 300 million people diagnosed with depression at some point in their lifetimes globally (World Health Organization, 2017) and its high comorbidity rates (Leahy et al., 2012), depression is important to assess and monitor throughout treatment.

The current study operationally defines and measures depression by higher scores on the following WEFS items: sad, guilty, lonely, apathetic, and hopeless/helpless. To assess the validity of the depression items of the WEFS to ensure that cognitive, behavioral, and physiological symptoms are accurately measured, the Quick Inventory of Depressive Symptomatology, Self Report (QIDS-SR; Rush et al., 2003) and the PROMIS Severity Measure for Depression, Adult (PROMIS Health Organization, 2008-2012;

Pilkonis et al., 2011) were used. Both of these measures have high validity and reliability rates when used in clinical practice.

The QIDS-SR (Rush et al., 2003) was adapted from the 30-item self-report, the Inventory of Depressive Symptomatology (Rush et al., 2000). In a study by Brown et al. (2008), the QIDS-SR was compared to the IDS-SR and the Hamilton Rating Scale for Depression (HRSD) to assess for validity of the short form. The researchers of this study found a high correlation between the IDS-SR ($r = 0.97$) and the HRSD ($r = 0.85$), suggesting that the short form is highly correlated with the original form, and with a widely used standardized measure. The short form of this self-report measure was intentionally chosen as to avoid exhausting participants by asking them to complete multiple lengthy questionnaires as a part of the current study.

The PROMIS Severity Measure for Depression, Adult (Pilkonis et al., 2014) is identical to the Patient Health Questionnaire (PHQ-9; Spitzer et al., 1999), which exhibits excellent psychometric properties, but has been adjusted to fit a recall period of 1 week, rather than 2. This decision was intentional, as having the same recall period was imperative for standardization.

Anger

According to Cella et al. (2010), anger can be defined as an angry mood, such as irritability and reactivity to others; negative thoughts about others, such as envy or vengefulness; verbal aggression; and difficulties controlling one's anger. Anger does not include physical aggression toward others (Cella et al., 2010). When developing the WEFS, anger was included as a factor because it is a common underlying symptom of various mental disorders. In fact, anger has been recognized as a common symptom

indicative of emotional distress (Cella et al., 2010). Negative emotions, such as anger and hostility, have been correlated with an increased physiological arousal and a higher risk of stress-related diseases (Suls & Bunde, 2005). Studies have shown that unexpressed anger can lead to depressive features, guilty feelings, anxiety, passive aggressiveness, and resentment of others (Kopper & Epperson, 1996). Therefore, assessing and treating anger, along with other emotional distress symptoms, is important to prevent and reduce rates of stress-related disorders. The PROMIS researchers believed that anger is present as a symptom in many different *DSM-5* (2013) diagnoses and, therefore, accounting for it in patients is important (Schalet et al., 2016).

The current study operationally defines and measures anger by higher scores on the following WEFS items: annoyed, bitter, frustrated, angry, and hostile. To assess the validity of the anger items of the WEFS, the PROMIS Emotional Distress Anger, Short Form (PROMIS Health Organization, 2012) was used as a standardized comparison. As previously stated, PROMIS researchers developed measures through comprehensive literature reviews, organization of items, qualitative item reviews, focus groups with patients, standardization of items, and factor analyses. The short forms were highly correlated with the long forms and acceptable for use in clinical and research practice. The psychometric properties of the PROMIS Emotional Distress Anger, Short Form, measure have been confirmed through a varied sample (PROMIS Health Organization, 2012).

Risk

For the current study, risk is defined as suicidal and homicidal ideation. Patients who endorse having thoughts about inflicting harm upon themselves or others are

characterized as high “risk.” Suicidality is characterized as one’s desire and intent to inflict harm on oneself or kill oneself. Homicidality is operationally defined as one’s desire and intent to inflict harm on or kill others. Keeping patients and the public safe is an ethical and legal duty of mental health professionals (APA Ethics Code Standard 4.05b, Disclosures). Owing to this law and ethical guideline, suicidality and homicidality should be routinely assessed.

To assess the validity of the suicidality and homicidality items on the WEFS, the CORE-OM (Evans et al., 2002) was used. The CORE-OM was chosen because it displays excellent psychometric properties and measures four dimensions: subjective well-being, problems/symptoms, life functioning, and risk and harm. Included in the risk dimension are questions regarding suicidality and homicidality, such as, “I have thoughts of hurting myself” and “I have threatened or intimidated another person.”

Positive Mental Health

Positive mental health has been defined as the presence of emotional, psychological, and social well-being, such that one is flourishing in these areas (Keyes, 2005; Keyes 2007; Lukat et al., 2016) while having high levels of positive affect and satisfaction and low levels of negative affect (Deci & Ryan, 2008). Having a purpose in life, being connected socially to others, experiencing positive emotions, and accepting oneself are also traits of individuals with positive mental health (Trompetter et al., 2017). Positive mental health is crucial to measure and foster in patients because it brings them from baseline and beyond to their optimal level of functioning. Positive mental health has been shown to be correlated with facing adversity, problem solving, regulating emotions, and autonomy (Frederickson, 2013; Teismann et al., 2018; Tugade & Frederickson,

2004). Positive mental health is subjective in nature and therefore needs a self-report to adequately measure (Deci & Ryan, 2008).

The current study operationally defines and measures positive mental health by higher scores on the following WEFS items: content, self-confident, optimistic, worthwhile, connected to others, adequate/good enough, in control of my emotions, interesting, attractive, and grateful. The CORE-OM was used as a standardized measure to compare to the positive mental health factor on the WEFS. The CORE-OM includes a dimension of subjective well-being with items related to optimism for the future and individuals' feelings about themselves.

Functioning

Functioning can be characterized by one's level of inability or ability to carry out responsibilities at home and at work, as well as in relationships at home, at work, with friends, and with family. Functioning is important to assess because it can provide data regarding levels of impairment. Are patients able to go to work but are not as productive as they could be because of their symptoms? Or, are patients not even able to leave their home anymore? Understanding level of impairment can help the clinician evaluate the patient's quality of life and the level of dysfunction caused by the patient's symptoms, furthering the clinician's understanding of each patient.

The current study operationally defines and measures one's level of functioning by higher scores on the following WEFS items: relationships at home, responsibilities at home, relationships with friends, relationships with coworkers/classmates, performance at work/school, use of leisure time, and physical health. To assess the validity of the functioning items of the WEFS, the CORE-OM was used because it includes a dimension

of functioning, with items related to coping (e.g., “I have felt able to cope when things go wrong”) and interpersonal relationships (e.g., “I have felt terribly alone and isolated”). The functioning dimension of the CORE-OM includes 12 items measuring functioning, making it a viable comparison for the WEFS.

Additional Factors of the Weekly Emotional and Functional Summary

Aside from gathering data on mental health symptoms, the WEFS also assesses information regarding significant life events that occurred during the previous week, medication changes, and the patient’s input on agenda items. The WEFS is believed to contribute to a holistic approach, while also increasing efficiency.

Significant Changes

The WEFS self-report questionnaire includes a few questions outside of symptomatology for patients to record. One of these questions asks about significant changes or life events that may have occurred over the previous week that the patient would like to discuss in session. This efficient way of gathering information from the patient can influence the productivity of the therapy session. Assessing significant life events also allows patients time to evaluate the previous week and reflect upon the possible influence of an event on their symptoms. This question can improve efficiency, as it encourages patients to think about the previous week in the waiting room prior to their appointment.

Psychiatric Medication Changes

Gathering psychiatric medication changes helps the clinician to document changes, remember to address medication changes with patients, and see if these adjustments impacted the patients’ scores on each facet of their mental health. Assessing

psychiatric medication changes allows the clinician to gather a more holistic understanding of a patient's progress. These miscellaneous items included in the WEFS promote a comprehensive case conceptualization to aid clinicians in tailoring treatment.

Agenda Setting

The WEFS self-report questionnaire is also unique in that it fosters collaboration by asking patients what they would like to add to the session's agenda. This item, which is oriented to cognitive-behavioral therapy-, provides an efficient way of gathering information from the patient that allows the clinician to collaborate on agenda items for the therapy session. After completing the self-report questionnaire and thinking through the previously stated questions, patients are asked what they would like to address in session. Agenda setting helps patients to feel that their opinions are valued. Collaborating on desired accomplishments in each session empowers patients to help take control of their treatment and reach their goals (Hatcher, 1999; Wolfe & Pincus, 1999).

The WEFS helps to inform and tailor treatment for each specific session. Understanding patients' levels of anxiety, depression, anger, and risk, along with their positive mental health and overall functioning, allows clinicians to adapt treatment and meet patient needs from week to week. Without doing so, clinicians may risk missing increased depressive symptoms while treating an anxiety disorder, for example. Gathering session-by-session data not only enhances progress toward treatment goals, but also ensures that valuable information is not missed and is included in treatment.

Feedback

At the end of each session, the WEFS includes an adapted version of the Session Rating Scale (Duncan et al., 2003) feedback measure. This feedback measure asks

patients to reflect on their session and evaluate their perceived relationship with their clinician, on whether the topics discussed helped them reach the goals they had set for themselves, on whether they appreciated the clinician's approach, on whether they learned ways to cope with their psychological problems, and on the overall session. Asking for feedback can help patients feel valued and heard and can provide the clinician with information regarding better ways to serve their patients.

A study conducted by Lambert et al. (2001) evaluated the effects of patients providing therapists with feedback. They split patients into an experimental group and a control group. Clinicians were instructed to ask the experimental group for feedback regarding their session. Clinicians were instructed not to ask patients in the control group for feedback. When comparing the two groups on retention rates, patients in the experimental group attended more therapy sessions and had improved outcomes in comparison to the control group. Furthermore, twice as many patients in the experimental group reached clinically significant changes in their symptoms (Lambert et al., 2001). These results provide evidence for the impact that feedback can have not only on retention rates, but also on clinically significant changes. Some patients may be timid or not know how to share their feedback unless formally assessed.

Psychometric Characteristics of Self-Report Measures

In order for a psychological test to be deemed useful in clinical practice, it must exhibit certain characteristics. According to Kline (2015), a useful psychological test must have at least an interval scale to represent meaningful differences between scale points so that scores can be compared and analyzed, but preferably a ratio scale with a

meaningful zero scale point. Additionally, it must be reliable, valid, discriminating, and show precise norms (Kline, 2015).

When developing self-report measures, evidence of reliability and validity is a fundamental requirement (Kazdin, 2003; Kline, 2015). More specifically, evidence of consistency within the measure and data supporting that the questionnaire measures the constructs it intends to measure are essential (Kazdin, 2003; Kline, 2015). In regard to reliability, a useful psychological test must be internally consistent, produce similar scores across populations, and be stable over time. Test construction emphasizes internal consistency as necessary before assessing for validity (Kline, 2015). That is, in order to determine if the test measures what it intends to measure, the items first have to be deemed related. Additionally, stability over time (i.e., test-retest reliability) is a valuable psychometric characteristic in self-report outcome measures because exhibiting measurement sensitivity would support score fluctuations as treatment progresses (Kazdin, 2003).

At the center, if a test measures what it intends to measure, it has achieved validity. To achieve validity, one or more types of validity must be exhibited within the measure (Kazdin, 2003). Whether a self-report questionnaire measures a construct of interest is commonly evaluated through the use of multiple questionnaires, as is the case with convergent validity (Kazdin, 2003). Face validity assesses the degree to which the purpose of the self-report measure is apparent to the individuals completing the scale. Concurrent validity targets how highly correlated a measure is with other standardized measures in the respective areas. Predictive validity evaluates if a measure is able to predict outcomes on a related variable. Additionally, content validity targets whether the

scale assesses all aspect of a variable, and construct validity measures how well the scale assesses a given construct. When assessing for the content of a measure, securing items that are distinct to a given construct and separating them from others that are not related also is valuable (Kline, 2015).

Additional psychometric characteristics that assess the usefulness of a psychological test include discriminatory power and standardization and norms. Discriminatory power is the degree to which a measure exhibits a spread of scores, leading to the establishment of norms and increasing the meaningfulness of a given score (Kline, 2015). Developing standardized scores over time to create norms significantly increases the utility of a psychological test.

The following study on the WEFS, a psychological test, is preliminary. Therefore, certain psychometric characteristics were chosen in exploring the utility of the measure for clinical practice. First, exploring the factor structure was deemed a prerequisite in examining the validity of the measure. To follow, construct validity, convergent validity measurements, internal consistency, and test-retest reliability were emphasized.

CHAPTER 3: METHOD

Design

The present study was correlational. This quantitative study used archival data from a mental health center in northeastern Pennsylvania to assess the psychometric properties of the Weekly Emotional and Functional Summary (WEFS; Salas, 2018). The Beck Anxiety Inventory (BAI); PROMIS Emotional Distress Anxiety, Short Form; Quick Inventory of Depressive Symptomatology, Self-Report (QIDS-SR); PROMIS Severity Measure of Depression, Adult; PROMIS Emotional Distress Anger, Short Form; Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM), and the Positive Affect and Negative Affect Schedule (PANAS) were used as standardized measures to compare to the following WEFS factors: anxiety, depression, anger, risk, positive mental health, and functioning.

Participants

The present study used a deidentified convenience sample of 153 adult patients seeking mental health treatment at an outpatient mental health center in northeastern Pennsylvania. Willing participants were assessed at time of intake and 1 week following the intake appointment prior to treatment.

Inclusion and Exclusion Criteria

The study inclusion criteria included (a) being a patient of the center at the time of intake and 1 week following, (b) having the ability to read and understand English at an 8th grade level, and (c) being at least 18 years old.

Potential participants were excluded if they (a) were not a patient at the center, (b) had an English reading level below 8th grade, and (c) were younger than 18 years old.

Measures

When selecting standardized measures to compare to the WEFS, self-report questionnaires were chosen based upon psychometric properties, brevity, and quality. To ensure standardization and consistency, all of the measures chosen included instructions for patients to recall symptoms over the previous 7 days.

Weekly Emotional and Functional Summary

The WEFS consists of 34 items intended to measure anxiety, depression, anger, harm, positive mental health, and functioning in psychiatric populations. The WEFS is a new, untested measure for which there are currently no psychometric properties. The purpose of the present study was to evaluate the psychometric properties of the WEFS by assessing for construct validity through a factor analysis, convergent validity, and test-retest reliability.

Beck Anxiety Inventory

The BAI (Beck et al., 1988) consists of 21 items to measure the severity of anxiety in psychiatric populations. Items on the BAI reflect neurophysiological, subjective, panic, and autonomic symptoms of anxiety. Patients are instructed to report their severity of anxiety symptoms on a 4-point Likert scale *Not at all* to *Severely, I could barely stand it*) over the previous 7 days. Scores on the BAI range from 0 to 63, with scores from 0 to 7 reflecting a minimal level of anxiety, 8 to 15 reflecting a mild level of anxiety, 16 to 25 reflecting a moderate level of anxiety, and 26 to 63 reflecting a severe level of anxiety. The BAI has shown high internal consistency ($\alpha = 0.92$), test-retest reliability after 1 week ($r = 0.75$), and after 5 weeks ($r = 0.83$). The BAI also demonstrated convergent and discriminant validity among panic disorder, generalized

anxiety, major depressive disorder, and dysthymic disorder. The BAI demonstrates a high correlation with the Hamilton Rating Scale for Anxiety (HRSA; $r = 0.51$) and a weaker correlation with the Hamilton Depression Rating Scale for Depression (HRSD; $r = 0.25$).

PROMIS Emotional Distress Anxiety, Short Form

The PROMIS Emotional Distress Anxiety, Short Form (PROMIS Health Organization, 2012) consists of seven questions measuring predominantly cognitive symptoms of anxiety. The items on this measure focus on fear, anxious misery, hyperarousal, and somatic symptoms of arousal. Patients are asked to report the severity of anxious symptoms on a 5-point Likert scale (1 = *Never* to 5 = *Always*) over the previous 7 days. Scores range from 7 to 35, with higher scores indicating more severe anxiety. This measure has been adapted from the original PROMIS Emotional Distress Anxiety inventory that consisted of 29 items. The original inventory was extensively researched by the patient-reported outcomes measurement and information system (PROMIS), a company founded by the National Institutes of Health. In developing self-report measures to be included in the *DSM-5* (2013), researchers used literature reviews, focus groups, item reviews, cognitive interviewing, and item and scale calibrations based on item response theory models. The original inventory demonstrated convergent validity when compared to the Generalized Anxiety Disorder-7 ($r = 0.92$), the Kessler 6 Psychological Distress Scale ($r = 0.88$), and the Mood and Anxiety Symptoms Questionnaire ($r = 0.80$). The seven-item short form is highly correlated with the original inventory ($\alpha = 0.96$) and demonstrates excellent reliability ($r = 0.89$). The researchers noted that the full item banks provide the most information regarding symptoms, but the

short forms still exhibited high psychometric properties when compared to legacy measures.

Quick Inventory of Depressive Symptomatology – Self Report

The QIDS-SR (Rush et al., 2003) consists of 16 items measuring the severity of depressive symptoms, including quality of sleep, sad mood, appetite, concentration, views of self, suicidal ideation, interests in activities, and energy level. Patients are instructed to rate their level of impairment in each domain of depressive symptomatology on a 4-point Likert scale over the previous 7 days. Scores range from 0 to 27, with scores from 6 to 10 reflecting mild depression, 11 to 15 reflecting moderate depression, 16 to 20 reflecting severe depression, and 21 to 27 reflecting very severe depression. The QIDS-SR has been adapted from the Inventory of Depressive Symptomatology Self-Report (IDS-SR). The QIDS-SR demonstrated high internal consistency and concurrent validity with the IDS-SR30 ($\alpha = 0.86$) and with the HRSD ($\alpha = 0.87$).

PROMIS Severity Measure of Depression, Adult

The PROMIS Severity Measure of Depression, Adult (PROMIS Health Organization, 2012) has been adapted from the Patient Health Questionnaire-9 (PHQ-9; Spitzer et al., 1999) for research and evaluation purposes to adjust the time frame of measurement from 2 weeks to 1 week. The PHQ-9 consists of nine questions measuring various domains of depressive symptomatology, such as interest in activities, feelings of sadness, quality of sleep, energy, appetite, self-esteem, concentration, and suicidality. Patients are instructed to report severity of symptoms on a 4-point Likert scale (0 = *Not at all* to 3 = *Nearly every day*) over the previous 7 days. Scores range from 0 to 27, with scores ranging from 5 to 9 reflecting mild depression, scores ranging from 10 to 14

reflecting moderate depression, scores ranging from 15 to 19 reflecting moderately severe depression, and scores ranging from 20 to 27 reflecting severe depression. The PHQ-9 is a self-report measure that was adapted from the full PHQ, which was adapted from the Primary Care Evaluation of Mental Disorders, a screening instrument designed for use in primary care. The PHQ-9 is highly correlated with other measures of depression, such as the Beck Depression Inventory (BDI; $r = 0.73$) and the General Health Questionnaire ($r = 0.59$; Kroenke, K., Spitzer, R. L., & Williams, J. B., 2001; Kroenke, K., & Spitzer, R. L., 2002; Martin, 2006).

PROMIS Emotional Distress Anger, Short Form

The PROMIS Emotional Distress Anger, Short Form (PROMIS Health Organization, 2012) consists of five items to assess angry mood and efforts to control anger. Anger is commonly conceptualized as attitudes of hostility and cynicism, marked by verbal and nonverbal behaviors that impede goal-directed behavior. Physical aggression is not included in this measure. Patients are instructed to rate their level of anger on a 5-point Likert scale (1 = *Never* to 5 = *Always*) over the previous 7 days. Scores range from 5 to 25, with higher scores reflecting more severe levels of anger. Scores are computed into *t* scores, with less than 55 reflecting none to slight levels of anger, 55.0 to 59.9 reflecting mild levels of anger, 60.0 to 69.9 reflecting moderate levels of anger, and 70 and greater reflecting severe levels of anger. The PROMIS Emotional Distress Anger, Short Form, exhibits strong reliability with the PROMIS Emotional Distress Anger, Full Scale ($\alpha = 0.96$), which is highly correlated with the Aggression Questionnaire ($r = 0.51$).

Clinical Outcomes in Routine Evaluation – Outcome Measure

The CORE-OM (Evans et al., 2002) consists of 34 questions measuring subjective well-being, symptoms, functioning, and risk. Four items measure subjective well-being. Twelve items measure symptoms, including anxiety, depression, physical, and trauma. Twelve symptoms measure functioning, including overall functioning, close relationships, and social relationships. The remaining six items, including harm to self and to others, measure risk. The CORE-OM was created to provide clinicians with a baseline and ongoing assessment of psychological distress, including important aspects of psychological well-being that clinicians find most useful.

The scale uses a 5-point Likert scale (0 = *Not at all* to 4 = *Most or all of the time*). Total scores range from 0 to 136, with higher scores indicating lower levels of well-being and functioning, severe symptoms, and suicidal or homicidal ideation. More specifically, on the well-being dimension, scores range from 0 to 16, with higher scores indicating deficits in well-being. Scores on the symptoms dimension range from 0 to 48, with higher scores indicating more severe levels of psychiatric symptoms. Scores on the functioning dimension range from 0 to 48, with higher scores indicating deficits in functioning. Scores on the risk dimension range from 0 to 24, with higher scores indicating patients at risk for suicidal or homicidal ideation. The CORE-OM displayed high internal consistency ranging from 0.75 to 0.95 for each dimension (Evans et al., 2002). Test-retest reliability was high as well, with scores ranging from 0.87 to 0.91 for each dimension. The CORE-OM's symptoms subtype of anxiety scale was positively correlated to the BAI (0.74), and the depression subtype was closely related to the BDI-II (0.68). The CORE-OM's symptoms dimension was also positively correlated with the Brief

Symptoms Inventory (0.76), the Symptom Checklist (0.87), and the General Health Questionnaire-Somatic Symptoms (GHQ-A; 0.60), and the GHQ-Anxiety (0.61). The well-being dimension was correlated with the BDI-II (0.79) and the GHQ (0.67) and the General Health Questionnaire-Social Dysfunction (GHQ-C; 0.60). The functioning dimension was correlated with the BDI-I (0.78) and the GHQ-C (0.60), and the General Health Questionnaire-Depression (GHQ-D; 0.55). The risk dimension was correlated with the GHQ-D. These correlations represent excellent convergent validity for the CORE-OM (Evans et al., 2002).

Positive and Negative Affect Schedule

The PANAS (Watson et al., 1988), consists of two 10-item scales measuring positive affect and negative affect. Each item consists of one adjective that is rated on a 5-point Likert scale (1 = *Very slightly to not at all* to 5 = *Extremely*). Patients are instructed to report how well an adjective describes them over the previous week. High negative-affect scores reflect a higher level of subjective distress. Low negative-affect scores reflect an absence of subjective distress. High positive-affect scores reflect enthusiasm and alertness. Low positive-affect scores reflect lethargy and sadness. Low positive-affect scores are more closely related to depression diagnoses, and high negative-affect scores are more closely related to anxiety diagnoses. Test-retest reliability demonstrated a range from 0.39 to 0.71 with an 8-week interval time. When compared to the Hopkins Symptom Checklist, the BDI, and the State-Trait Anxiety Inventory, the positive-affect scale correlations ranged from -0.19 to -0.36, and the negative-affect scale correlations ranged from 0.51 to 0.74.

Procedures

The study was conducted using archival data from 153 patients at a mental health center in northeastern Pennsylvania. Staff members at the private practice collected the archival data. Each patient interested in an intake appointment completed various forms for the center, including eight self-report questionnaires and brief demographic information (i.e., gender, age, ethnicity). The patients had the choice of completing the self-report measures by printing them from the center's website, by having the self-report measures emailed to them, by having the self-report measures mailed to their home address, or by completing the self-report measures at the center prior to their scheduled appointment. If patients were not able to complete the self-report measures before their first appointment, they were asked to complete them before coming to their second appointment, prior to treatment. Completing self-report measures before the second appointment happened on only two occasions.

After completing the required forms for an intake appointment (including the self-report measures), patients were given the option to consent and allow staff members to deidentify their scores on the eight self-report measures (and the WEFS again 1 week after the intake) to be used for research purposes. Consent forms were filed in a locked drawer at the private practice's office. Patients were instructed to provide the completed self-report measures to their clinician, who checked for completion. Clinicians were instructed to return the self-report measures from patients who consented to research to the staff members after the intake appointment to deidentify and code the data. Clinicians were instructed to keep the self-report measure for treatment purposes if patients did not consent to research.

Staff members at the private practice then scored the self-report measures of those who consented to the study and met the inclusion criteria and created a data set. The data set included general demographic information (i.e., gender, age, and ethnicity), primary psychiatric diagnoses (and when necessary, secondary psychiatric diagnoses), deidentified scores on the self-report measures, and deidentified scores on each item of the WEFS at the time of intake and 1 week following.

The deidentification process included the removal of direct patient identifiers, such as names, addresses, email addresses, and telephone numbers. The patient identifiers were replaced with randomly generated numbers and added to the data set. Raw data were returned to the patients' clinicians with an interpretation of their scores for treatment purposes. Raw data were also kept locked in patients' charts in the private practice's office. After approval was received from the Institutional Review Board, the deidentified archival data set was given to the principal investigator and converted to an SPSS file for further analysis.

CHAPTER 4: RESULTS

Introduction

The researchers employed principal component factor analyses to validate the proposed factor structure and correlational analyses to evaluate the psychometric properties of the Weekly Emotional and Functional Summary (WEFS). More specifically, correlations were conducted to assess the consistency of the WEFS scale scores over time and to examine the relationship between the factors of the WEFS and other standardized measures. In addition, a coefficient alpha was calculated to assess the internal consistency of the items within each factor to further assess the psychometric properties of the self-report measure.

Demographic Analyses

To investigate the psychometric properties of the WEFS in a clinical sample, an archival data set consisting of 153 participants seeking mental health treatment at an outpatient mental health practice in northeastern Pennsylvania was analyzed. Of the 207 participants, 54 individuals did not complete the surveys or omitted items, thus leaving 153 individuals who completed the WEFS. The data from these 153 participants were used for the investigation of the WEFS factor structure and internal consistency reliability analysis. Additionally, 27 individuals did not complete the ethnicity section of the demographic questionnaire, leaving 128 individuals with completed demographic information.

The demographic characteristics, including age, gender, ethnicity, primary diagnosis, and, when necessary, secondary diagnosis, were assessed and analyzed for trends. Of the 207 participants who completed all survey and demographic

questionnaires, 94 were female (61%) and 59 were male (39%). In regard to age, 59 fell into the 18- to 29-year age range (38.7%), 34 fell in the 30- to 40-year age range (22%), and 60 fell in the age 41- to 85-year age range (39.3%). The mean age of the sample was 38 years old ($SD = 15$).

Table 1 lists frequency distributions for the ethnicities endorsed by participants in the study. One should note that 27 participants (17.4%) did not endorse an ethnicity. As evident by the demographic statistics, the sample was not as diverse as researchers had hoped. The sample consisted predominantly of European Americans (55.5%), with little diversity in ethnicity.

Table 1*Demographic Analyses for Ethnicity*

Ethnicity	Frequency	Percent
Native American	2	1.3
Asian	6	3.9
African American	9	5.8
Hispanic	11	7.2
European / Caucasian	85	55.5
Arab	4	2.6
Jewish	1	0.6
Hindu	1	0.6
Other	7	4.5
Missing	27	18
Total	128	82

In regard to psychiatric diagnoses, 153 participants' primary diagnostic codes were assessed and analyzed as well. Table 2 details the classifications of primary psychiatric diagnoses of the sample. One should note that 18 participants (11.6%) did not receive a psychiatric diagnosis at the time of data collection. Missing data for this demographic variable may be the result of diagnoses not yet added to patient charts at the time of data collection or diagnoses deferred. The most common primary psychiatric

diagnosis was anxiety disorders (32%), followed by trauma- and stressor-related disorders (28%), and depressive disorders (17%). The sample exhibits expected diagnoses for a sample seeking outpatient mental health treatment.

Table 2

Demographic Analyses for Primary Psychiatric Diagnosis

Psychiatric diagnosis	Frequency	Percent
Bipolar and Related Disorders	8	5.3
Depressive Disorders	27	17.7
Anxiety Disorders	50	32.7
Obsessive-Compulsive Disorder	1	0.6
Trauma and Stressor-Related Disorders	43	28
Somatic Symptom and Related Disorders	3	2
Dissociative Disorders	1	0.6
Neurodevelopmental Disorders	2	1.3
Missing	18	11.8
Total	153	100

Note. Diagnoses based upon the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.).

Of the 153 participants, 66 participants received a secondary psychiatric diagnosis. Table 3 details the classifications of secondary psychiatric diagnoses of the sample. The most common secondary psychiatric diagnosis was anxiety disorders (39%), followed by depressive disorders (25%) and trauma- and stressor-related disorders (16%). The sample exhibits expected diagnoses for a sample seeking outpatient mental health treatment.

Table 3*Demographic Analyses for Secondary Psychiatric Diagnosis*

Psychiatric diagnosis	Frequency	Percent
Depressive Disorders	17	25
Anxiety Disorders	26	39
Obsessive-Compulsive Disorder	3	4
Trauma and Stressor-Related Disorders	11	16
Dissociative Disorders	1	1.5
Neurodevelopmental Disorders	1	1.5
Sleep-Wake Disorders	3	4
Substance-Related and Addictive Disorders	2	3
Personality Disorders	1	1.5
Other Conditions	1	1.5
Total	66	100

Note. Diagnoses based upon the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.).

Participation in the study was voluntary, and all participants remained anonymous. The only identifying information gathered was the previously mentioned demographic data.

Means and standard deviations for each self-report measure and, when applicable, subscales within were calculated as well to show how participants in the sample tended to

score on each measure. Table 4 lists average participant scores for standardized self-report measures used for construct validity analyses. One should note that eight participants (5%) did not complete the Positive Affect and Negative Affect Scale (PANAS).

Table 4*Participant Self-Report Measure Scores*

Self-report measure	Mean score	Standard deviation	Score range ^a
PROMIS Emotional Distress Anxiety, Short Form	62.05	9.51	(36.3 – 82.7)
PROMIS Severity Measure of Depression, Adult	9.86	6.61	(0 – 26)
Quick Inventory of Depressive Symptomatology – Self Report	12.52	7.36	(0 – 32)
PROMIS Emotional Distress Anger, Short Form	53.82	10.67	(32.9 – 83.3)
Positive Affect Subscale of the PANAS	25.23	8.58	(10 – 47)
Negative Affect Subscale of the PANAS	25.72	8.57	(10 – 47)
Well-being Subscale of the CORE-OM	8.23	3.89	(0 – 16)
Psychiatric Subscale of the CORE-OM	21.96	10.85	(0 – 46)
Functioning Subscale of the CORE-OM	16.74	8.99	(0 – 36)
Risk Subscale of the CORE-OM	0.99	2.15	(0 – 11)
Beck Anxiety Inventory	14.14	10.5	(0 – 46)

Note. Patient-Reported Outcomes Measurement Information System (PROMIS), Positive Affect and Negative Affect Scale (PANAS), Clinical Outcomes in Routine Evaluation - Outcome Measure (CORE-OM)

^aScore ranges based upon scoring instructions for each measure.

Hypothesis 1

Three separate principal components factor analyses were conducted for each domain of the WEFS. The first domain and factor analysis calculated was frequency of endorsement of symptoms, followed by intensity of endorsement of symptoms and perception of functioning. The factors in each domain were intercorrelated to assess relationships within the overall scale.

Factor Analysis of WEFS Frequency Domain

The first analyzed domain of the WEFS was frequency. Individuals who score high on this domain typically endorse experiencing distressing psychiatric symptoms at a high frequency or occurrence within a week. The only exception is with the positive mental health factor, in which high scores indicate a high frequency or occurrence of protective factors, such as self-confidence and optimism.

In order to test whether the frequency ratings of the WEFS demonstrated construct validity and to further investigate the factor structure of the measure, a principal components factor analysis with varimax rotation using the Kaiser criterion was conducted. The 27 items from the WEFS were analyzed, and the rotated component matrix revealed six factors. Using a minimum factor loading criterion of .40 for items in each factor, six factors were retained. This factor loading criterion accounted for 68.60% of the total variance. Table 5 presents the description and distribution of items' corresponding factors, along with each item's factor loading. A Kaiser-Meyer-Olkin (KMO) statistic was found to be strong (KMO = 0.883), suggesting that the inter-item correlations are relatively compact, and thus, the factor analysis should yield distinct and reliable factors. Also, the Bartlett's test of sphericity was found to be significant ($p <$

.0001). This significance suggests that each item correlates significantly with other items and a factor analysis is appropriate for this dataset.

Items that loaded uniquely to one factor were included; therefore, items that loaded on two or more factors were omitted unless otherwise noted. Additionally, individual factors with only one or two items were discarded and not interpretable, leaving three interpretable factors. Results indicate that items that loaded on individual factors closely reflect three of the five hypothesized factors: Positive Mental Health, Anxiety, and Anger.

Factor 1, Positive Mental Health, included eight items. Individuals who score high on this factor endorse frequently experiencing protective factors. This factor included a combination of items that described positive mental health, including *content*, *self-confident*, *optimism*, *adequate/good enough*, *in control of my emotions*, *interesting*, *attractive*, and *grateful*. These items generally reflect the degree to which individuals feel positively about themselves. The items that did not load on this factor include *worthwhile* and *connected to others*.

Factor 2, Anxiety, included four items. Individuals who score high on this factor endorse frequently experiencing distressing symptoms related to clinical anxiety. This factor included a combination of items that described anxiety symptoms, including *worried*, *afraid/scared*, *restless*, and *overwhelmed*. These items generally reflect the degree to which individuals experience anxiety symptoms. The item that did not load on this factor was *ashamed*.

Factor 3, Anger, included four items. Individuals who score on this factor endorse frequently experiencing the emotion, anger. This factor included a combination of items

that described anger, including *annoyed*, *bitter*, *frustrated*, and *angry*. These items generally reflect the degree to which individuals experience the emotion anger. The item that did not load on this factor was *hostile*.

Table 5*WEFS Frequency Factor Loadings*

Factor 1: Positive Mental Health	
Item	Loading
Item 16: Content	0.753
Item 17: Self-confident	0.777
Item 18: Optimistic	0.849
Item 21: Adequate/Good enough	0.658
Item 22: In control of my emotions	0.598
Item 23: Interesting	0.716
Item 24: Attractive	0.757
Item 25: Grateful	0.714

Factor 2: Anxiety	
Item	Loading
Item 1: Worried	0.689
Item 2: Afraid/scared	0.740
Item 3: Restless	0.793
Item 4: Overwhelmed	0.715

Factor 3: Anger

Item	Loading
Item 1: Annoyed	0.816
Item 2: Bitter	0.708
Item 3: Frustrated	0.704
Item 4: Angry	0.840

Note. WEFS = Weekly Emotional and Functional Summary.

Table 6 lists the eigenvalues and the percentage of variance explained by the factors for the individual WEFS Frequency factors using rotation sums of squared loadings. The percentages of variance, as well as the cumulative percentage variance, are presented for each factor.

Table 6*Eigenvalues and Explanation of Variance by WEFS Frequency Factor*

Factor	Eigenvalues	% of variance	Cumulative %
1	5.665	20.983	20.983
2	3.779	13.995	34.978
3	3.448	12.771	47.749

Note. WEFS = Weekly Emotional and Functional Summary.

WEFS Frequency Coefficient Alpha Reliability

To investigate the internal consistency reliability of the WEFS, a total scale estimate of internal reliability was calculated using Cronbach's coefficient alpha. Also, domain estimates of internal consistency were calculated for each factor. Coefficient alpha data for the total scale and each factor are listed in Table 7.

Table 7*Coefficient Alpha Reliability for Individual WEFS Frequency Factors*

Factor	Description	Coefficient Alpha
1	Positive Mental Health	0.910
2	Anxiety & Depression	0.839
3	Anger	0.855

Total WEFS Frequency Scale Coefficient Alpha = 0.646

Note. WEFS = Weekly Emotional and Functional Summary.

Factor Analysis of WEFS Intensity Domain

The second analyzed domain of the WEFS was intensity. Individuals who score high on this domain typically endorse experiencing distressing psychiatric symptoms at a severe level within 1 week. The only exception is with the positive mental health factor, in which high scores indicate a high intensity of protective factors, such as self-confidence and optimism.

In order to test whether the intensity ratings of the WEFS demonstrated construct validity and to further investigate the factor structure of the measures, a principal components factor analysis with varimax rotation using the Kaiser criterion was conducted. The 27 items from the WEFS were analyzed, and five factors with rotated eigenvalues greater than 1 were extracted. Using the factor loading criterion of .40 or higher for items in each factor, five factors were retained. This factor loading criterion accounted for 70.91% of the total variance. Table 8 presents the description and

distribution of items' corresponding factors, along with each item's factor loading. A KMO statistic was found to be strong (KMO = 0.867), suggesting that the inter-item correlations are relatively compact, and thus, the factor analysis should yield distinct and reliable factors. Also, the Bartlett's test of sphericity was found to be significant ($p < .0001$). The significance suggests that each item correlates significantly with other items and a factor analysis is appropriate for this dataset.

Items that loaded uniquely to one factor were included; therefore, items that loaded on two or more factors were omitted unless otherwise noted. Additionally, individual factors with only one or two items were discarded and not interpretable, leaving three interpretable factors. Results indicate that items that loaded on individual factors closely reflect three of the five hypothesized factors: Positive Mental Health, Anxiety and Depression, and Anger.

Factor 1, Positive Mental Health, included 10 items. Individuals who score high on this factor endorse experiencing a high level of protective factors. This factor included a combination of items that described positive mental health, including *content*, *self-confident*, *optimism*, *worthwhile*, *connected to others*, *adequate/good enough*, *in control of my emotions*, *interesting*, *attractive*, and *grateful*. These items generally reflect the degree to which individuals feel positively about themselves. All items loaded onto this factor.

Factor 2, Anxiety and Depression, included six items. Individuals who score high on this factor endorse experiencing a high level of distressing symptoms related to clinical anxiety and depression. This factor included a combination of items that described psychological distress, such as anxiety and depressive symptoms, including

worried, afraid/scared, restless, overwhelmed, sad, and hopelessness/helplessness. These items generally reflect the degree to which individuals experience psychological distress. This factor combined two factors, Anxiety and Depression, but did not include such items as *ashamed, guilty, lonely, and apathetic.*

Factor 3, Anger, included three items. Individuals who score high on this factor endorse experiencing a high level of anger. This factor included a combination of items that described anger, including *annoyed, bitter, and angry.* These items generally reflect the degree to which individual experience the emotion, anger. The items that did not load on this factor were *frustrated* and *hostile.*

Table 8*WEFS Intensity Factor Loadings*

Factor 4: Positive Mental Health	
Item	Loading
Item 16: Content	0.839
Item 17: Self-confident	0.880
Item 18: Optimistic	0.894
Item 19: Worthwhile	0.895
Item 20: Connected to others	0.845
Item 21: Adequate/Good enough	0.845
Item 22: In control of my emotions	0.755
Item 23: Interesting	0.828
Item 24: Attractive	0.836
Item 25: Grateful	0.806

Factor 2: Anxiety & Depression	
Item	Loading
Item 1: Worried	0.871
Item 2: Afraid/Scared	0.679
Item 3: Restless	0.769
Item 4: Overwhelmed	0.757

Item 6: Sad	0.733
Item 10: Hopeless/helpless	0.610

Factor 3: Anger	
Item	Loading
Item 11: Annoyed	0.777
Item 12: Bitter	0.708
Item 14: Angry	0.850

Note. WEFS = Weekly Emotional and Functional Summary.

Table 9 lists the eigenvalues and the percentage of variance explained by the factors for the individual WEFS Intensity factors using rotation sums of squared loadings. The percentages of variance, as well as the cumulative percentage variance, are presented for each factor.

Table 9*Eigenvalues and Explanation of Variance by WEFS Intensity Factor*

Factor	Eigenvalues	% of variance	Cumulative %
1	7.266	26.911	26.911
2	4.414	16.348	43.260
3	3.271	12.114	55.373

Note. WEFS = Weekly Emotional and Functional Summary.

WEFS Intensity Coefficient Alpha Reliability

To investigate the internal consistency reliability of the WEFS, a total scale estimate of internal reliability was calculate using Cronbach's coefficient alpha. Also, domain estimates of internal consistency were calculated for each factor. Coefficient alpha data for the total scale and each factor are listed in Table 10.

Table 10*Coefficient Alpha Reliability for Individual WEFS Intensity Factors*

Factor	Description	Coefficient Alpha
1	Positive Mental Health	0.955
2	Anxiety & Depression	0.889
3	Anger	0.848

Total WEFS Intensity Scale Coefficient Alpha = 0.893

Note. WEFS = Weekly Emotional and Functional Summary.

Factor Analysis of WEFS Functioning

The third analyzed domain of the WEFS was frequency. Individuals who score high on this domain typically endorse meeting expectations and functioning at home, at the workplace, and with others. Individuals who score low on this domain typically endorse functional impairments.

In order to test whether the functioning domain of the WEFS demonstrated construct validity and to further investigate the factor structure of the measures, a principal components factor analysis with varimax rotation was conducted. The seven items from the WEFS Functioning domain were analyzed separately because a separate rating scale (0-10) was used. Using the factor loading criterion of .40 and more for items in each factor, one factor was retained, accounting for 55.58% of the total variance. Table 11 presents the description and distribution of items' corresponding factors, along with each item's factor loading. A KMO statistic was found to be strong (KMO = 0.848),

suggesting that the inter-item correlations are relatively compact, and thus, the factor analysis should yield distinct and reliable factors. Also, the Bartlett's test of sphericity was found to be significant ($p < .0001$). The significance suggests that each item correlates significantly with other items and a factor analysis is appropriate for this dataset.

In regard to individual factors, only items that loaded uniquely to one factor were included; therefore, items that loaded on two or more factors were omitted unless otherwise noted. Results indicate that items that loaded on individual factors closely reflect one of the one hypothesized factor: Functioning.

Factor 1, Functioning, included seven items. Individuals who score high on this factor endorse meeting expectations placed upon them in the workplace, at home, and in relationships with others. This factor included a combination of items that described overall functioning in multiple areas of life, including *relationships at home*, *responsibilities at home*, *relationship with friends*, *relationship with coworkers/classmates*, *performance at work/school*, *use of leisure time*, and *overall physical health*. Lower scores on these items generally indicate the degree to which individuals feels they are functionally impaired because of their mental health symptoms. Higher scores on these items generally indicate the degree to which individuals feel they are functioning well. All hypothesized items loaded onto this factor.

Table 11*WEFS Functioning Factor Loading*

Factor 7: Functioning	
Item	Loading
Item 1: Relationships at home	0.661
Item 2: Responsibilities at home	0.712
Item 3: Relationships with friends	0.780
Item 4: Relationships with coworkers/classmates	0.744
Item 5: Performance at work/school	0.761
Item 6: Use of your leisure time	0.821
Item 7: How do you feel physically	0.728

Note. WEFS = Weekly Emotional and Functional Summary.

Table 12 lists the eigenvalue and the percentage of variance explained by the factor for the individual WEFS Functioning factor using rotation sums of squared loadings. The percentages of variance, as well as the cumulative percentage variance, are presented for the factor.

Table 12*Eigenvalue and Explanation of Variance by WEFS Functioning Factor*

Factor	Eigenvalue	% of variance	Cumulative %
1	3.89	55.58	55.58

Note. WEFS = Weekly Emotional and Functional Summary.

WEFS Functioning Coefficient Alpha Reliability

To investigate the internal consistency reliability of the WEFS, a total scale estimate of internal reliability was calculated using Cronbach's coefficient alpha. Also, domain estimates of internal consistency were also calculated for each factor. Coefficient alpha data for the total scale and each factor are listed in Table 13.

Table 13*Coefficient Alpha Reliability for WEFS Functioning Factor*

Factor	Description	Coefficient alpha
1	Functioning	0.865

Total WEFS Functioning Scale Coefficient Alpha = 0.865

Note. WEFS = Weekly Emotional and Functional Summary.

Correlation of WEFS Factors

Pearson product-moment correlation coefficients were computed for each relationship between factors. Table 14 presents the intercorrelations for each WEFS factor. Pearson product-moment correlation coefficients for a majority of the factors were significantly and positively correlated ($p < .001$). The correlation coefficients of those factors that were significantly correlated ranged from $-.502$ to $.729$, suggesting strong relationships between most factors. However, the relationships are not strong enough to suggest multicollinearity, meaning each factor can be considered to measure its own individual construct. Additionally, the intercorrelations between factors were in the expected directions. Positive Mental Health was positively correlated with functioning and negatively correlated with Anxiety, Anger, and Anxiety and Depression. Anxiety was positively correlated with Anger and Anxiety and Depression and negatively correlated with Positive Mental Health and Functioning. Anger was positively correlated with Anxiety and Depression as well. Finally, Functioning was positively correlated with Positive Mental Health but negatively correlated with Anxiety, Anger, and Anxiety and Depression.

Table 14*Pearson Intercorrelation Matrix of WEFS Factors*

		F1 (F)	F2 (F)	F3 (F)	F1 (I)	F2 (I)	F3 (I)	F1 (Fu)
F1 (F)	<i>r</i> <i>p</i> =	1	-.502** .000	-.380** .000	.620** .000	-.432** .000	.245** .000	.708** .000
F2 (F)	<i>r</i> <i>p</i> =		1	.533** .000	-.316** .000	.674** .000	.422** .000	-.472** .000
F3 (F)	<i>r</i> <i>p</i> =			1	-.321** .000	.374** .000	.729** .000	-.382** .000
F1 (I)	<i>r</i> <i>p</i> =				1	.028 .733	.052 .525	.506** .000
F2 (I)	<i>r</i> <i>p</i> =					1	.583** .000	-.315** .001
F3 (I)	<i>r</i> <i>p</i> =						1	-.211* .035
F1 (Fu)	<i>r</i> <i>p</i> =							1

Note. WEFS = Weekly Emotional and Functional Summary. F1 (F) = Positive Mental Health, Frequency; F2 (F) = Anxiety, Frequency; F3 (F) = Anger, Frequency; F1 (I) = Positive Mental Health, Intensity; F2 (I) = Anxiety, Intensity; F3 (I) = Anger, Intensity; F1 (Fu) = Functioning. ** $p < .01$, two-tailed. * $p < .05$, two-tailed.

Hypothesis 2

WEFS Construct Validity Analyses

To examine whether the WEFS factors correlated with previously established measures in the respective areas, analyses using the Pearson product-moment coefficients of correlation were conducted. However, because the factor structure obtained was different from that hypothesized, adjustments were made. Therefore, the seven WEFS factors obtained in the factor analysis were correlated to previously established measures

in the respective areas, as opposed to the hypothesized factors.

WEFS Frequency Positive Mental Health Factor

It was hypothesized that the WEFS Positive Mental Health factor would be negatively correlated with a standardized self-report measure of positive mental health and well-being, including the well-being dimension of the Clinical Outcomes in Routine Evaluation-Outcome Measure (CORE-OM), and positively correlated with the positive affect subscale of the PANAS. This hypothesis was supported. Total scores on the WEFS Frequency Positive Mental Health factor and the well-being dimension of the CORE-OM were found to be significantly and negatively correlated, $r(153) = -.781, p < .0001$. Additionally, total scores on the WEFS Frequency Positive Mental Health factor and the positive affect subscale of the PANAS were found to be significantly and positively correlated, $r(145) = .711, p < .0001$.

The results indicate that the more frequently individuals endorse positive mental health characteristics on the WEFS, the less frequently they endorse deficits in their positive mental health and well-being on a standardized measure. Additionally, the results indicate that the more frequently individuals endorse positive mental health characteristics on the WEFS, the more frequently they endorse positive affect characteristics on a standardized measure. These results suggest strong construct validity as demonstrated by $-.781$ and $.711$ correlations between the WEFS Frequency Positive Mental Health factor and the well-being dimension of the CORE-OM and positive affect subscale of the PANAS (Table 15).

Additional exploratory analyses revealed that the WEFS Frequency Positive Mental Health factor was significantly and negatively correlated with measures of

anxiety, anger, and depression (Table 15). However, these correlations were not as strong as other relationships, suggesting that the presence of positive mental health may be a related but ultimately independent concept. Additionally, the WEFS Frequency Positive Mental Health factor was significantly and negatively correlated with a standardized measure of deficits of functioning ($-.691$), suggesting that cultivating positive symptoms may relate to one's ability to perform well in relationships and in responsibilities (Table 15).

WEFS Frequency Anxiety Factor

It was hypothesized that the WEFS Anxiety factor would be positively correlated with a standardized self-report measure of Anxiety, including the Beck Anxiety Inventory (BAI); the PROMIS Emotional Distress Anxiety, Short Form; and the negative affect subscale of the PANAS. This hypothesis was supported. Total scores on the WEFS Frequency Anxiety factor and BAI were found to be significantly and positively correlated, $r(153) = .668, p < .0001$. Total scores on the WEFS Frequency Anxiety factor and the PROMIS Emotional Distress Anxiety, Short Form, were found to be significantly and positively correlated, $r(153) = .740, p < .0001$. Additionally, total scores on the WEFS Frequency Anxiety factor and the negative affect subscale of the PANAS were found to be significantly and positively correlated, $r(145) = .736, p < .0001$.

The results indicate that the more frequently individuals endorse anxiety symptoms on the WEFS, the more frequently they endorse anxiety symptoms on other standardized measures. Additionally, the results indicate that the more frequently individuals endorse anxiety symptoms on the WEFS, the more frequently they also endorse experiencing negative affect characteristics. These results suggest strong

construct validity as demonstrated by .668, .740, and .736 correlations between the WEFS Frequency Anxiety factor and the BAI; the PROMIS Emotional Distress Anxiety, Short Form; and the negative affect subscale of the PANAS (Table 15), respectively.

Additional exploratory analyses revealed that the WEFS Frequency Anxiety factor was significantly and positively correlated with standardized measures of anger, depression, and deficits in well-being and functioning (Table 15). However, correlations between the WEFS Frequency Anxiety factor and standardized measures of depression were the strongest of these, suggesting that the overlap between these diagnoses is considerable.

WEFS Frequency Anger Factor

It was hypothesized that the WEFS Anger factor would be positively correlated with a standardized self-report measure of anger, including the PROMIS Emotional Distress Anger, Short Form and the negative affect subscale of the PANAS. This hypothesis was supported. Total scores on the WEFS Frequency Anger factor and the PROMIS Emotional Distress Anger, Short Form, were found to be significantly and positively correlated, $r(153) = .729, p < .0001$. Total scores on the WEFS Frequency Anger factor and the negative affect subscale of the PANAS were found to be significantly and positively correlated, $r(145) = .492, p < .0001$.

The results indicate that the more frequently individuals endorse anger on the WEFS, the more frequently they endorse anger on other standardized measures. Additionally, the results indicate that the more frequently individuals endorse anger on the WEFS, the more frequently they also endorse experiencing negative affect characteristics. These results suggest strong construct validity, as demonstrated by .729

and .492 correlations between the WEFS Frequency Anger factor and the PROMIS Emotional Distress Anger, Short Form, and the negative affect subscale of the PANAS (Table 15).

Additional exploratory analyses revealed that the WEFS Frequency Anger factor was significantly and positively correlated with standardized measures of anxiety, depression, and deficits in well-being and functioning (Table 15). The significance may suggest that anger is commonly related to anxiety and depressive symptoms, such that it may underlay these symptoms.

Table 15*Pearson Correlation Matrix of WEFS Frequency Factors & Standardized Measures*

Measure		F1 (F)	F2 (F)	F3 (F)
BAI	<i>r</i>	-.362**	.740**	.430**
	<i>p</i> =	.000	.000	.000
PROMIS Emotional Distress Anxiety, Short Form	<i>r</i>	-.424**	.740**	.385**
	<i>p</i> =	.000	.000	.000
PROMIS Emotional Distress Anger, Short Form	<i>r</i>	-.404**	.377**	.729**
	<i>p</i> =	.000	.000	.000
PROMIS Severity Measure Depression, Adult	<i>r</i>	-.590**	.660**	.495**
	<i>p</i> =	.000	.000	.000
QIDS-SR	<i>r</i>	-.583**	.675**	.464**
	<i>p</i> =	.000	.000	.000
Positive Affect (PANAS)	<i>r</i>	.711**	-.404**	-.275**
	<i>p</i> =	.000	.000	.000
Negative Affect (PANAS)	<i>r</i>	-.583**	.736**	.492**
	<i>p</i> =	.000	.000	.000
Well-being (CORE-OM)	<i>r</i>	-.781**	.657**	.507**
	<i>p</i> =	.000	.000	.000
Functioning (CORE-OM)	<i>r</i>	-.691**	.588**	.585**
	<i>p</i> =	.000	.000	.000

Note. Weekly Emotional and Functional Summary (WEFS), Beck Anxiety Inventory (BAI), Patient-Reported Outcomes Measurement Information System (PROMIS), Positive Affect and Negative Affect Scale (PANAS), Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM). Bolded items signify correlations calculated for specific hypotheses noted in text. F1 (F) = Positive Mental Health, Frequency; F2 (F) = Anxiety, Frequency; F3 (F) = Anger, Frequency. ** $p < .01$, two-tailed. * $p < .05$, two-tailed.

WEFS Intensity Positive Mental Health Factor

It was hypothesized that the WEFS Positive Mental Health factor would be negatively correlated with a standardized self-report measure of positive mental health

and well-being, including the well-being dimension of the CORE-OM, and positively correlated with the positive affect subscale of the PANAS. This hypothesis was supported. Total scores on the WEFS Frequency Positive Mental Health factor and the well-being dimension of the CORE-OM were found to be significantly and negatively correlated, $r(151) = -.487, p < .0001$. Additionally, total scores on the WEFS Frequency Positive Mental Health factor and the positive affect subscale of the PANAS were found to be significantly and positively correlated, $r(143) = .458, p < .0001$.

The results indicate that the higher individuals endorse positive mental health characteristics on the WEFS, the less they endorse deficits in their positive mental health and well-being on a standardized measure. Additionally, the results indicate that the higher individuals endorse positive mental health characteristics on the WEFS, the more they endorse positive affect characteristics on a standardized measure. These results suggest strong construct validity, as demonstrated by $-.487$ and $.458$ correlations between the WEFS Frequency Positive Mental Health factor and the well-being dimension of the CORE-OM and positive affect subscale of the PANAS (Table 16).

Additional exploratory analyses revealed that the WEFS Intensity Positive Mental Health factor was significantly and negatively correlated with standardized measures of anxiety, anger, depression, and deficits in well-being and functioning (Table 16). These results were similar to those of the WEFS Frequency Positive Mental Health factor, such that these correlations were not as strong as other relationships, possibly suggesting that the severity of positive mental health may be a related but independent topic to address in mental health treatment. The significant and negative correlation supports an inverse relationship; however, the strength of the relationship may support previous research that

shows solely focusing on the alleviation of symptoms does not equate to the presence of positive mental health.

WEFS Intensity Anxiety and Depression Factor

It was hypothesized that the WEFS Anxiety factor would be positively correlated with standardized self-report measures of anxiety, including the BAI; the PROMIS Emotional Distress Anxiety, Short Form; and the negative affect subscale of the PANAS. However, it was also hypothesized that the WEFS Depression factor would be positively correlated with standardized self-report measures of depression, including the Quick Inventory of Depressive Symptomatology – Self Report (QIDS-SR), the PROMIS Severity Measure for Depression, Adult, and the negative affect subscale of the PANAS. This hypothesis was supported. These two hypotheses were combined when calculating correlations for this factor because both anxiety and depression items loaded onto this factor.

First, total scores on the WEFS Intensity Anxiety and Depression factor and BAI were found to be significantly and positively correlated, $r(150) = .559, p < .0001$. Second, total scores on the WEFS Intensity Anxiety and Depression factor and the PROMIS Emotional Distress Anxiety, Short Form, were found to be significantly and positively correlated, $r(150) = .604, p < .0001$. Third, total scores on the WEFS Intensity Anxiety and Depression factor and the negative affect subscale of the PANAS were found to be significantly and positively correlated, $r(142) = .623, p < .0001$. Fourth, total scores on the WEFS Intensity Anxiety and Depression factor and the QIDS-SR were found to be significantly and positively correlated, $r(150) = .552, p < .0001$. Finally, total scores on the WEFS Intensity Anxiety and Depression factor and the PROMIS Severity

Measure for Depression, Adult, were found to be significantly and positively correlated, $r(150) = .607, p < .0001$.

The results indicate that the more severe individuals endorse anxiety and depressive symptoms on the WEFS, the more they endorse anxiety and depression symptoms on other standardized measures. Additionally, the results indicate that the more severe individuals endorse anxiety and depressive symptoms on the WEFS, the more they also endorse experiencing negative affect characteristics on other standardized measures. These results suggest strong construct validity, as demonstrated by .559, .604, .623, .552, and .607 correlations between the WEFS Intensity Anxiety and Depression factor and the BAI; the PROMIS Emotional Distress Anxiety, Short Form; the QIDS-SR; the PROMIS Severity Measure of Depression, Adult; and the negative affect subscale of the PANAS, respectively (Table 16).

Additional exploratory analyses revealed that the WEFS Intensity Anxiety factor was significantly and positively correlated with standardized measures of anger and deficits in well-being and functioning (Table 16). These results were similar to the WEFS Frequency Anxiety factor and revealed that the severity of anxious and depressive symptoms is correlated with anger and that the symptoms are more strongly related to deficits in well-being and functioning. These results may suggest that the more severely anxious or depressed individuals are, the less likely they are to experience positive mental health symptoms and perform well with responsibilities or relationships. These results aligns well with the literature regarding functional impairments that mental health disorders cause.

WEFS Intensity Anger Factor

It was hypothesized that the WEFS Anger factor would be positively correlated with a standardized self-report measure of anger, including the PROMIS Emotional Distress Anger, Short Form, and the negative affect subscale of the PANAS. This hypothesis was supported. Total scores on the WEFS Intensity Anger factor and the PROMIS Emotional Distress Anger, Short Form, were found to be significantly and positively correlated, $r(151) = .630, p < .0001$. Total scores on the WEFS Intensity Anger factor and the negative affect subscale of the PANAS were found to be significantly and positively correlated, $r(143) = .459, p < .0001$.

The results indicate that the more severe individuals endorse anger on the WEFS, the more they endorse anger on other standardized measures. Additionally, the results indicate that the more severe individuals endorse anger on the WEFS, the more they also endorse negative affect characteristics. These results suggest strong construct validity, as demonstrated by .630 and .459 correlations between the WEFS Intensity Anger factor and the PROMIS Emotional Distress Anger, Short Form, and the negative affect subscale of the PANAS, respectively (Table 16).

Additional exploratory analyses revealed that the WEFS Intensity Anger factor was significantly and positively correlated with standardized measures of anxiety, depression, and deficits in well-being and functioning (Table 16). As mentioned with the WEFS Frequency Anger factor, these results further suggests that the more severe anxious or depressive symptoms are, the more likely an individual is to experience anger or irritability. These results may be the result of low frustration tolerance from combating mental illness symptoms or of poor emotion regulation strategies.

Table 16*Pearson Correlation Matrix of WEFS Intensity Factors & Standardized Measures*

Measure		F1 (I)	F2 (I)	F3 (I)
BAI	<i>r</i>	-.262**	.559**	.392**
	<i>p</i> =	.001	.000	.000
PROMIS Emotional Distress Anxiety, Short Form	<i>r</i>	-.211**	.604**	.369**
	<i>p</i> =	.009	.000	.000
PROMIS Emotional Distress Anger, Short Form	<i>r</i>	-.296**	.289**	.630**
	<i>p</i> =	.000	.000	.000
PROMIS Severity Measure Depression, Adult	<i>r</i>	-.376**	.607**	.434**
	<i>p</i> =	.000	.000	.000
QIDS-SR	<i>r</i>	-.355**	.552**	.409**
	<i>p</i> =	.000	.000	.000
Positive Affect (PANAS)	<i>r</i>	.458**	-.416**	-.208*
	<i>p</i> =	.000	.000	.013
Negative Affect (PANAS)	<i>r</i>	-.314**	.623**	.459**
	<i>p</i> =	.000	.000	.000
Well-being (CORE-OM)	<i>r</i>	-.487**	.610**	.430**
	<i>p</i> =	.000	.000	.000
Functioning (CORE-OM)	<i>r</i>	-.462**	.509**	.516**
	<i>p</i> =	.000	.000	.000

Note. Weekly Emotional and Functional Summary (WEFS), Beck Anxiety Inventory (BAI), Patient-Reported Outcomes Measurement Information System (PROMIS), Positive Affect and Negative Affect Scale (PANAS), Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM). Bolded items signify correlations calculated for specific hypotheses noted in text. F1 (I) = Positive Mental Health, Intensity; F2 (I) = Anxiety & Depression, Intensity; F3 (I) = Anger, Intensity. ** $p < .01$, two-tailed. * $p < .05$, two-tailed.

WEFS Functioning Factor

It was hypothesized that the WEFS Functioning factor would be negatively correlated with a standardized self-report measure of functioning, including the functioning dimension of the CORE-OM. Total scores on the WEFS Functioning factor and the functioning dimension of the CORE-OM were found to be significantly and negatively correlated, $r(102) = -.699, p < .0001$.

The results indicate that the higher individuals endorse positive functioning in various areas of life on the WEFS, the less they endorse deficits in functional impairments on a standardized measure. These results suggest strong construct validity, as demonstrated by a $-.699$ correlation between the WEFS Functioning factor and the functioning dimension of the CORE-OM (Table 17).

Additional exploratory analyses revealed that the WEFS Functioning factor is significantly and negatively correlated with standardized measures of anxiety, anger, depression, and deficits in well-being (Table 17). This finding provides support for diagnostic purposes that mental illness symptoms are commonly associated with functional impairments in responsibilities and relationships.

Table 17*Pearson Correlation Matrix of WEFS Functioning Factor & Standardized Measures*

Measure		F1 (Fu)
BAI	<i>r</i> <i>p</i> =	-.262** .000
PROMIS Emotional Distress Anxiety, Short Form	<i>r</i> <i>p</i> =	-.311** .001
PROMIS Emotional Distress Anger, Short Form	<i>r</i> <i>p</i> =	-.405** .000
PROMIS Severity Measure Depression, Adult	<i>r</i> <i>p</i> =	-.641** .000
QIDS-SR	<i>r</i> <i>p</i> =	-.590** .000
Positive Affect (PANAS)	<i>r</i> <i>p</i> =	.670** .000
Negative Affect (PANAS)	<i>r</i> <i>p</i> =	-.365** .000
Well-being (CORE-OM)	<i>r</i> <i>p</i> =	-.649** .000
Functioning (CORE-OM)	<i>r</i> <i>p</i> =	-.699** .000

Note. Positive Affect and Negative Affect Scale (PANAS), Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM). Bolded items signify correlations calculated for specific hypotheses noted in text. F1 (Fu) = Functioning. ** $p < .01$, two-tailed. * $p < .05$, two-tailed.

Hypothesis 3

Test-Retest Reliability

Test-retest reliability was calculated for the WEFS by correlating the test and the retest total scores from the time of intake and 1 week following to evaluate the reliability of the WEFS over time. More specifically, test-retest reliability was calculated for the following WEFS domains: Frequency, Intensity, and Functioning. Additionally, dependent groups *t* tests were calculated for each domain, as well to assess for significant differences between the means.

The test-retest correlation for the WEFS Frequency of .720 was high ($p < .0001$), indicating strong reliability. The first-session mean WEFS Frequency total score of 45.73 ($SD = 10.74$) and the second-session mean WEFS Frequency total score of 44.73 ($SD = 10.09$) were comparable, and the means were not significantly different, $t(53) = 1.178, p < .244$. The test-retest correlation for the WEFS Intensity of .428 was moderate ($p < .002$), which does not meet the acceptance cutoff of .70. The first-session mean WEFS Intensity total score of 87.14 ($SD = 35.32$) and the second-session mean WEFS Intensity total score of 92.10 ($SD = 36.54$) were comparable, and the means were not significantly different, $t(50) = 1.448, p < .154$. The test-retest correlation for the WEFS Functioning of .860 was high ($p < .0001$), indicating strong reliability. The first-session mean WEFS Functioning total score of 42.12 ($SD = 13.93$) and the second-session mean WEFS Functioning total score of 45.63 ($SD = 12.44$) were comparable, and the means were significantly different, $t(30) = -2.533, p < .017$.

CHAPTER 5: DISCUSSION

Interpretation and Implication

The present study was conducted to evaluate the psychometric properties and the factor structure of the Weekly Emotional and Functional Summary (WEFS; Salas, 2018). This study sought to address the following: (a) to evaluate the factor structure of the self-report measure, (b) to examine the validity of the WEFS factors by studying the relationship between each factor and standardized measures with strong psychometric properties, and (c) to assess the measure's stability over time.

Psychometric Properties of the WEFS Factors

The WEFS is composed of three domains: Frequency, Intensity, and Functioning. The WEFS was developed with these three domains to comprehensively measure mental health symptoms, positive mental health characteristics, and functional impairments. A principal components factor analysis was conducted for each domain because of categorical distinctiveness and differences in rating scales. The first hypothesis related to factor structure was partially supported, as the frequency and intensity domains revealed three of the five hypothesized factors. The second hypothesis related to construct validity was fully supported in each domain. The third hypothesis related to test-retest reliability was also fully supported in each domain. In summary, the WEFS has a factor structure that includes clinical symptoms commonly seen in outpatient mental health settings, such as anxiety, depression, and anger, as well as positive mental and functional impairments. The predicted correlations were in the expected directions of the hypotheses, lending support to the construct validity of the WEFS. It appears to be internally consistent, as shown by the scale coefficient alpha scores for each domain.

WEFS Frequency Factors

The factor analysis conducted with the frequency domain revealed three interpretable factors: Positive Mental Health, Anxiety, and Anger. The Positive Mental Health factor measures how often an individual experiences positive affect and protective factors, such as optimism, self-confidence, and connectedness to others. The Anxiety factor measures how often an individual experiences anxious symptoms, such as worry and restlessness. The Anger factor measures how often an individual experiences the emotion of anger. Intercorrelations were in the expected directions, such that anxiety and anger were significantly and negatively correlated with positive mental health and significantly and positively correlated with one another.

Additionally, correlations with other standardized measures were in the expected directions. The Positive Mental Health factor was significantly and positively correlated with a measure of positive affect and negatively correlated with a measure of deficits in positive mental health and well-being. The Anxiety factor was significantly and positively correlated with measures of anxiety and negative affect. The Anger factor was significantly and positively correlated with measures of anger and negative affect. These findings suggest that factors accurately exhibited convergent validity, meaning that the items were closely related to measures in their respective areas. Test-retest reliability results indicated that the Frequency domain was stable over time.

The results indicated that the hypothesized depression factor was not distinct or strong enough to load on its own. The items loaded onto more than one factor, suggesting an overlap and comorbidity between depressive symptoms and other mental health concerns, such as anxiety and anger. Perhaps if individuals experience distressing mental

health symptoms for a significant period of time, they are more likely to develop depressive symptoms (e.g., hopelessness for success in treatment, sadness with their levels of distress, feelings of loneliness from not being understood) regardless of meeting clinical levels. These items also may be similar to other mental health symptoms.

Additionally, the results indicated that the hypothesized risk factor was not distinct or strong enough to load on its own. After further consideration, this result appeared to be due to content differences, such that the correlation between homicidality and suicidality is minimal, although this result is still important to assess routinely.

WEFS Intensity Factors

The factor analysis conducted with the intensity domain revealed three interpretable factors: Positive Mental Health, Anxiety and Depression, and Anger. The Positive Mental Health factor measures the strength of an individual's positive affect and protective factors, such as optimism, self-confidence, and connectedness to others. The Anxiety factor measures the severity of anxiety an individual experiences, such as worry and restlessness. The Anger factor measures the severity of anger an individual experiences. Intercorrelations were in the expected directions, such that anxiety and depression and anger were significantly and negatively correlated with positive mental health and significantly and positively correlated with one another.

Additionally, correlations with other standardized measures were also in the expected directions. The Positive Mental Health factor was significantly and positively correlated with a measure of positive affect and negatively correlated with a measure of deficits in positive mental health and well-being. The Anxiety and Depression factor was significantly and positively correlated with measures of anxiety, depression, and negative

affect. The Anger factor was significantly and positively correlated with measures of anger and negative affect. These findings suggest that factors accurately exhibited convergent validity, meaning that the items were closely related to measures in their respective areas. Test-retest reliability results indicated that the Intensity domain was stable over time.

The results indicated that the hypothesized depression factor was not distinct enough to load on its own and rather overlapped significantly with anxiety. Although this result was not hypothesized, the factor loading is understandable because of the close relationship between anxiety and depressive disorders. Similar to the frequency domain, the results indicated that the hypothesized risk factor was not distinct or strong enough to load on its own. As previously mentioned, this result also appeared to be the result of content differences, such that the correlation between homicidality and suicidality may be minimal. The factor structures of the frequency and intensity domains were similar. This result suggests that these factors exhibit strong psychometric properties and accurately measure distressing mental health symptoms, as well as positive mental health.

WEFS Functioning Factor

The factor analysis conducted with the Functioning domain revealed one cohesive interpretable factor. The Functioning factor measures how well an individual meets demands at home, school, work, and in relationships. The Functioning factor was significantly and negatively correlated with a standardized measure of functional impairment.

Test-retest reliability results indicated that the Functioning domain was stable over time, but that there were significant differences between the means at the $p < .01$

level. This result may suggest that an individual's functioning increases slightly after the intake appointment because of hope in the treatment plan and normalization of symptoms (Irving et al., 2004). Hope may enhance motivation to approach tasks, as an individual perceives less helplessness (Irving et al., 2004). Another possibility may be that functioning scores increased if the therapist provided behavioral activation or an active homework assignment to engage the client in the treatment plan. Behavioral activation is engaging but does not lead to an immediate fluctuation in symptoms (Barlow, 2014).

Exploratory Analyses

Ancillary analyses were conducted when examining the psychometric properties of the WEFS. These analyses were not based on hypotheses, should be evaluated with caution, and should be studied with an independent sample. Given the number of analyses conducted, these results may capitalize on chance. These findings were noted in Chapter 4 and appear to align well with previous literature in the respective areas. First, the WEFS Positive Mental Health factor for both frequency and intensity domains was significantly and negatively correlated with the WEFS Anxiety, Anger, and Anxiety and Depression factors, as well as with standardized measures of anxiety, depression, and anger. However, these correlations were not as strong as other relationships. This result suggests that the presence and strength of positive mental health is related to negative symptoms but is ultimately an independent concept. This finding aligns with research conducted on the dual-factor model of positive mental health and psychopathology, such that eliminating negative symptoms does not automatically equate to positive mental health (Greenspoon & Saklofske, 2001; Lukat et al., 2016; Trompetter et al., 2017). Additionally, positive mental health should be routinely assessed because it may function

as a protective factor against relapse of mental health symptoms by aiding in problem-solving abilities, enhancing resiliency, processing adversity, and regulating emotions (Frederickson, 2013; Teismann et al., 2018; Tugade & Frederickson, 2004).

Next, the WEFS Anxiety factors for both frequency and intensity domains were significantly and positively correlated with the WEFS Anger and Anxiety and Depression factors, as well as with standardized measures of depression and anger. However, correlations between the WEFS Frequency Anxiety factor and standardized measures of depression were the strongest correlations. This result aligns with previous research suggesting that anxiety and depression diagnoses are highly comorbid and that symptoms overlap considerably (Fava et al., 2000).

Additionally, the WEFS Anger factors for both frequency and intensity domains were significantly and positively correlated with the WEFS Anxiety and Anxiety and Depression factors, as well as with standardized measures of anxiety and depression. This finding supports previous research indicating that anger underlies many mental health concerns (Cella et al., 2010). Anger has been strongly correlated with an increased physiological arousal, which may put an individual at a higher risk for stress-related diseases (Suls & Bunde, 2005). Furthermore, unrecognized anger can lead to depressive symptoms, feelings of guilt, anxious symptoms, passive aggressiveness, and resentment toward others, further supporting the necessity of assessment of anger in mental health settings (Kopper & Epperson, 1996).

Finally, the WEFS Functioning factor was significantly and negatively correlated with the WEFS Anxiety, Anger, and Anxiety and Depression factors, as well as with standardized measures of anxiety, anger, and depression. This finding suggests that the

WEFS may accurately assess for functional impairments in symptomatic populations. Individuals with mental health disorders often experience difficulties meeting expectations placed upon them in the workplace, at school, and in relationships.

Clinical Utility of the WEFS

According to research conducted on the development and construction of psychological tests, a self-report measure must adequately sample or assess the concept under consideration, exhibit standardization, display normed values that show a distribution, demonstrate objectivity, and somehow have impact on or benefit others (Aiken, 1998). Additionally, self-report measures are deemed useful if they exhibit objectivity, are quantifiably measured, comprise scores that communicates meaning, support the economy of time, are standardized, and are generalizable or provide external validity (Aiken, 1998). Utility of a self-report measure, including comparative and clinical utility, assesses the value of a scale, such that it is as useful as or more useful than a similar test and that it provides additional diagnostic assessment or treatment information (Cohen et al., 2013). More specifically, clinical utility is measured by assessing psychometric soundness, costs, and benefits (Cohen et al., 2013). The current study of the WEFS was preliminary. While further investigation of the measure is needed, the results of this preliminary study provide promising consideration to the utility of the measure and its ability to address a specific need for a comprehensive, yet consolidated, self-report measure for clinical purposes.

The results of the study support that the WEFS adequately measures common presenting problems, including anxiety, anger, positive mental health, and functioning, in outpatient mental health settings. The results of the study indicate the WEFS's depression

items would benefit from further development and investigation. Currently, the measure appears to exhibit standardization, display objectivity through quantifiable measurements, and impact others by offering a cost-effective and efficient measure that is approachable in terms of administration and scoring. Additionally, scores on the WEFS factors demonstrate meaning, such that a higher score in the Anxiety factor may be interpreted as more severe anxiety. The items of the measure are often a single word or symptom for ease of completion.

In terms of psychometric characteristics, the WEFS appears to exhibit stability over time and a cohesive factor structure, as well as aspects of construct and content validity. Additionally, the benefits of the WEFS are believed to outweigh the costs in economic and noneconomic terms. For example, the measure provides a wealth of information at a low economic and time cost. The measure is also easy to administer and understand because the items are common symptoms and organized by domain and factor.

At this time, the WEFS is believed to be a unique and useful alternative to existing outcome self-report measures. It is comprehensive in content (i.e., diagnostic symptoms, protective factors and quality of life, and functional impairments), is inclusive in the assessment of the content (i.e., frequency and intensity of symptoms), and is succinct in fashion. As the results of the study demonstrate, the WEFS appears to adequately assess common presenting problems in outpatient mental health settings and measure other psychological characteristics, such as positive mental health, that have been shown to enhance functioning and quality of life.

To review, the literature on self-report questionnaires states that clinicians who

incorporate reliable and valid clinical tools in their practice improve their accuracy of diagnosing and the efficacy of treatment (Bar-Kalifa et al., 2016; Hannan et al., 2005; Wolfe & Pincus, 1999; Zimmerman et al., 2018). Treatment protocols also typically recommend the use of self-report measures for improved accuracy in diagnosing and for routine use in monitoring treatment progress (APA, 2010; Harding et al., 2011; National Collaborating Centre for Mental Health, 2009; Peterson & Fagan, 2017; Trivedi et al., 2006; Zimmerman et al., 2018). Quantitative and objective measurements demonstrate progress through treatment in a standardized way that can be used for comparison purposes with precision (Lambert et al., 2001; Lambert et al., 2002; Lambert, Hansen, & Finch, 2001; Nezu et al., 2000; Prescott et al., 2017; Wolfe & Pincus, 1999; Zimmerman et al., 2008; Zimmerman et al., 2018).

The literature on the usefulness of self-report measures may appear straightforward. However, questionnaires are commonly underutilized in clinical practice because clinicians do not want to burden their patients each week with extensive paperwork (Peterson & Fagan, 2017). To date, self-report measures assess only one or two areas and are either lengthy for patients to complete or lengthy for clinicians to score. Research shows that if a routine outcome measure is not parsimonious, it will likely be underutilized as a clinical tool of measurement (Peterson & Fagan, 2017). Underutilization of routine self-report measures may lead to inaccurate assumptions regarding the patient's functional impairments or current level of distress (Fayers & Machin, 2013; Wolfe & Pincus, 1999; Zimmerman et al., 2018). The value of self-report measures cannot be overlooked in clinical practice, as they have been shown to increase efficacy of treatment (Zimmerman et al., 2008; Zimmerman et al., 2018) and are

efficient, systematic, standardized (Wolfe & Pincus, 1999), as well as cost-effective, tools (Garfield et al., 2011). The WEFS attempts to address these obstacles to routine outcome measuring.

To address efficiency, the WEFS assesses seven factors in 34 items, as opposed to similar standardized measures in each factor totaling 90 items. The WEFS was purposefully designed for patients to quickly read and rate symptoms rather than to try to understand wordy items. The WEFS is also organized by factor. The organization provides simple administration and allows the clinician to score and interpret quickly. The organization of the scale also increases the efficiency, effectiveness, and practicality of the measure without compromising crucial data needed for tracking progress.

In terms of cost effectiveness, the WEFS is one measure that assesses many variables, including common diagnostic symptoms seen in mental health settings, as well as positive mental health and functioning. The benefits of using one scale for routine outcome measuring include simplicity for both patient and clinician, an additional source of data for documentation and treatment progress, efficiency of gathering data in multiple areas, and cost effectiveness of purchasing one measure as opposed to many. For example, a self-report measure outside of the public domain, such as the Beck Anxiety Inventory (BAI; Beck et al., 1988; Beck & Steer, 1990), costs approximately \$2.47 for each use. If clinicians were to routinely assess anxiety symptoms in 20 to 30 patients a week, they would spend \$49.44 to \$74.10 per week to measure one domain. At maximum, if a patient was in therapy for a year and measured weekly as recommended, the total cost would be \$3,848.00.

If used in clinical practice, a patient would complete the self-report measure

before the intake appointment to provide baseline information. During the intake appointment, the clinician would review the scores with the patient and explain the meaning of these scores while reflecting back to the patient for accuracy. If the directions were unclear to the patient, the clinician would review the difference between a frequency rating and an intensity rating. The patient would also be asked to arrive at the office approximately 10 minutes early for each session in order to complete the measure beforehand. The clinician would keep the completed measures in the patient's file, noting the date and session number to appropriately track progress. Scores could be added to the patient's progress note and used as an effective tool in comparing progress and even setbacks for informing treatment goals, agenda setting, and supporting growth.

Although this study is preliminary, the results suggest that the WEFS is a valuable measure. It may be used in clinical settings to assess patients' frequency and intensity of symptoms in the following factors: Anxiety, Anxiety and Depression, Anger, Positive Mental Health, and Functioning. Furthermore, these results suggest that the WEFS is a standardized measure that can potentially be used to aid in collaboration, inform treatment, measure progress outcomes, increase the efficacy of treatment, assess treatment goals, and evaluate current level of functioning to assess improvement over time. The WEFS assesses various clinical domains and includes critical aspects to patient care that are often overlooked, such as positive mental health and how symptoms impair functioning. As an added value from a cognitive-behavioral approach, the WEFS also includes agenda setting and feedback, in a brief and consolidated manner, to enhance efficiency for time in the session to be spent on therapeutic interventions. These results contribute to the usefulness of the WEFS in clinical practice and provide a welcome

alternative to measuring treatment progress.

Limitations

The findings from the present study have limitations regarding the demographic information of the sample, the setting in which the sample was gathered, and the geographical location. The present study assessed willing participants who were seeking an intake evaluation at an outpatient mental health center in northeastern Pennsylvania. As the sample was predominantly composed of European American participants, it was not as representative as the researchers had hoped, thereby limiting the generalizability of the findings. The outpatient setting, measurements from one geographical location, and lack of a controlled nonsymptomatic sample may limit the findings as well. Additionally, some participants did not complete the measures entirely, leading to varied sample sizes in the correlations to standardized measures.

There was a significantly smaller sample size for test-retest reliability. A sample size may have been the result of patients not attending their follow-up appointments, patients not completing the scale a second time, or perhaps clinicians forgetting to submit the scale a second time to the researchers. Test-retest results are limited because of the small sample size. Future research may focus more heavily on the reliability of the measure to fully assess measurement sensitivity and stability over time.

Potential confounding variables that would threaten the strength of the internal validity of the measure may be some participants completing measures quickly without thinking through each question because of the amount of paperwork to complete at the first appointment. In addition, participants might have completed the self-report with the help of a family member or close friend in the waiting room, potentially confounding

their true answers. Perhaps some participants did not understand the distinction between frequency and intensity ratings while completing the scale in the waiting room before having had the opportunity to discuss the measure with the clinician.

Additionally, social desirability could have influenced the way some participants completed the measures, such that they may have wanted to please their clinician. Some may not have felt comfortable completing the measures with honesty until establishing a trusting relationship with their clinician. The self-report measures chosen were face valid, and therefore, participants could have easily understood the purpose of the measure or the content it was assessing. If participants were not comfortable sharing information, they could have easily disguised their answers by responding more favorably (e.g., rating symptoms lower than they were). Although the effects of social desirability may not have negatively impacted the factor structure or validity analyses, it could impact the generalizability and usefulness of the study and measure. However, just as vulnerability is necessary for treatment to be effective, honesty in reporting symptoms is as well. These limitations may be considered when understanding the utility of the measure and adapting its use to each patient. Finally, some individuals failed to complete all of the items of the measure and therefore were not included in the sample. The researcher did not investigate specific characteristics, such as diagnoses, of those who omitted items. Therefore, not completing all items of the measure is another limitation of the study to be investigated in future research.

Future Directions

Future research with the WEFS may further assess the factor structure and the psychometric properties of the measure in different clinical settings (e.g., primary care, inpatient, or residential programs) and geographical locations. Replicating the study with a larger sample size, broader demographic variables, and even a control group could further validate the psychometric properties of the WEFS for use with patients diverse in clinical presentation, ethnicity, and cultural background. Additionally, future research may explore the scores of participants with specific clinical presentations and diagnoses on the measures and factors of the WEFS.

As Kline (2015) and Aiken (1998) described, self-report measures must provide normed values for scores to be meaningful and comparable. Future research may focus on further developing normed values of scores through the inclusion of a control nonsymptomatic sample and through gathering larger samples to demonstrate a frequency distribution of the scores and percentiles associated with each score.

Collecting data 4 weeks after the time of intake may provide a better estimate of test-retest reliability. Such information may also be useful in further distinguishing the Frequency domain from the Intensity domain as treatment progresses. It was hypothesized that the participant scores would be relatively stable 1 week after the intake appointment. The differentiation of the Frequency scores and Intensity scores over time would be interesting to note as participants progress through treatment. Perhaps patterns in severity of symptoms would decrease at a quicker rate than frequency of symptoms as a result of the implementation of coping skills.

Given the frequency of depressive disorders in outpatient mental health settings, the development of a stable and distinct depression factor calls for further investigation. Generating items that are unique to depression and do not overlap with anxiety or anger would be important. For example, items on the Beck Depression Inventory (BDI-II; Beck et al., 1996), such as past failures, loss of pleasure, self-dislike, self-criticism, and worthlessness, were specifically designed and tested for discriminant validity with anxiety. Therefore, only items that measured depression and not anxiety were included and overlapping items were excluded when Beck and colleagues developed the 21-item measure (Beck et al., 1996). Future research with the WEFS may choose to implement a similar process to isolate items that create a cohesive and internally consistent depression factor. Then, reassessment of construct validity and reliability would be needed. Perhaps developing more items to assess risk factors for suicidal ideation apart from homicidal ideation would be useful.

Additionally, the exploratory analyses conducted revealed many possibilities for future research. For example, negative affect was significantly and positively correlated with anxiety, anger, and anxiety and depression factors. Better understanding this relationship and its difference from positive affect and trying to examine if one variable or factor can predict the other would be interesting. Further research on negative affect could be valuable in clinical settings to better understand the development of mental illness and, from a cognitive-behavioral approach, the negative thinking patterns that are revealed in a negative affect measure and their relationship to specific diagnoses. A relationship between negative affect and depression would appear to more likely be stronger; however, the results of the study showed a stronger relationship between

anxiety and negative affect than anxiety and depression with negative affect (Table 14). Further exploring this relationship may help clinicians to better understand and detect how negative affect relates to diagnostic presentations.

Another area of study could be to further assess the slight increase in the WEFS Functioning Domain from the intake appointment to the second session, perhaps by isolating the WEFS Positive Mental Health factors to determine whether a specific item could predict a difference in scores from Time 1 to Time 2. Hope and optimism were hypothesized as variables that could have mediated the relationship between functioning scores. However, further assessment could lead to a better understanding in clinical settings as to the components that encourage patients to return to their second session and help with engagement in therapy.

A potential confound of the study may be experiential avoidance, as defined by patients suppressing unwanted uncomfortable emotional or cognitive experiences. Patients engaging in experiential avoidance may underreport their symptoms on the WEFS, leading to inaccurate data. Future research may account for this potential confound by also administering a measure of experiential avoidance. Future research may also administer other standardized measures in each of the factors to further validate how well the WEFS aligns in regard to convergent validity. Future research may include a scale of social desirability as well to assess for an additional confound in which patients could report based upon wanting to please their clinician.

Based on this preliminary study, the WEFS appears to be a promising measure that could be applied in clinical practice. Overall, the general findings reveal that the WEFS possesses sound psychometric properties related to reliability and validity. Further

psychometric research is necessary to replicate the current findings and extend them.

Further research designed to investigate the stability of the intensity domain is warranted.

At this point, the WEFS may provide a useful, cost-effective, and efficient alternative to employing numerous measures during intake and throughout treatment.

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