MeSA-AE Assist Comprehensive Report

Name: Case, Sample 3   Age: 44
Sex: F   Report Date: 11/11/2016   Test Date: 11/9/2016 4:02 PM   On Meds: U
Test Type: Standard
Education Level: One or more years of Graduate Studies

GENERAL INTERPRETIVE GUIDELINES

The purpose of the MeSA-AE Assist test is to measure an individual's overall executive control by assessing their visual attention control and cognitive flexibility. The Executive Control Quotient (ECQ) scale is a measure of two key components of an individual's overall executive functioning. Executive Functioning is defined as the cognitive abilities necessary for the self-regulation of behavior and the achievement of purposeful goals. The MeSA-AE Assist's ECQ scale is based on the combined measurement of the Attention Control Quotient (ECQ) scale and Conceptual Flexibility Quotient (CFQ) scale. In general, Attention Control is an integrated global measure of an individual's selective attention, visuospatial sequencing, and central processing speed. Primarily, Cognitive Flexibility is considered a comprehensive measure of an individuals' consolidated abilities of working memory, alternating attention and visuospatial classification as well as their central processing speed. These two scales are based on the individual's test performance scores for Test A and Test B, respectively.

This MeSA-AE Assist Comprehensive Report was created in order to help the examiner interpret the MeSA-AE Assist test results. The test by itself is not to be used as a stand-alone instrument in making any diagnosis. The use of this report requires that tests be administered in accordance with the specified test guidelines under the supervision of a licensed health care professional who is qualified in its interpretation. Its primary purpose is to help guide the examiner in interpreting the strengths and weaknesses of individuals pertaining to executive control, attention control and cognitive flexibility. In accordance with professional standards this confidential report is only to be distributed to others after it has been carefully reviewed, modified as needed, and signed by the examiner. This Comprehensive Report provides the examiner with suggestions and guidelines for interpreting the test scores. However, it is not to be construed as prescriptive, definitive, or diagnostic. Examiners will need to exercise their clinical judgment in determining if the test is fully valid and to integrate it with other clinical data in preparing their signed interpretive report. The authors and publisher of this test are not responsible for any inaccuracies or errors that may result from its usage.

Validity of MeSA-AE Assist Test Results

Based on my clinical judgement, this individual validly completed both tests A and B.

It was not known whether or not this individual was on any medications that could have affected his test performance. If this person is later tested on medication that is considered to help improve her test performance then these current test results can be analyzed using the separate Comparative Report. In this case the examiner can use this report as an aid in evaluating the effects of any medication based on their clinical interpretation of the changes in her test performance. Examiners may also find any test score changes as useful in helping them to identify the specific effects of an alternate medication or different dosages or combinations of medication in improving this individual's attention control or cognitive flexibility.

Education Adjustment

The research discussed in the manual pertaining to the test performance of individuals with different intellectual abilities identified the need to make adjustments to their test completion times for the MeSA-AE Assist test. This adjustment is only made for adults (i.e., individuals 18 years or older).

Since a person's IQ score is not often available, this adjustment needs to be made based on a person's education level and is generally reflective of their overall intellectual abilities. This correction is necessary in order to accurately calculate a person's attention control and cognitive flexibility quotient scores, but it is not possible to make this correction unless the individual's education level is specified. Individuals who have a higher education level typically have lower test completion times. Using this adjustment for an individual's test times makes it possible to compare them to the appropriate normative data set in order to accurately identify cognitive strengths and weaknesses that take into account their education level. An adjustment was made to the completion time of the MeSA-AE Assist test scores in order to take into account this person's education level. This individual completed one or more years of graduate studies and an adjustment was made to her test scores taking into account her education level and intelligence in order to compare her performance to others like herself.

Attention Control Scale

The Attention Control Quotient (ACQ) scale is based on the time it takes the individual to complete Test A. There are six specific cognitive skills required for an individual to perform well on Test A. These six skills include selective attention, visuospatial sequencing, fine motor control, response inhibition, sustained attention and central processing speed. The test task requires the individual to locate correct targets amongst the field of targets using their selective attention. Choosing the target in the correct order primarily requires the use of selective attention and visuospatial sequencing. The individual must also practice response inhibition to avoid violating the target rule order and selecting a target out of sequence. Individuals will need to use their sustained attention skills to facilitate making consistent and accurate responses throughout the test in a timely manner. Overall test score times are also dependent on the integration of the individual's central processing speed ability with the five other cognitive skills required by Test A discussed above. Impairments in either selective attention in combination with visuospatial sequencing or response inhibition deficits are likely to result in sequential errors. Sequential errors require the individual to stop and begin again from the last correct target selected and, thus, result in longer Test A time scores.

Since ACQ is a key component of executive functioning and the scale score is dependent on the individual's overall test completion time, it is important for examiners to use their clinical judgment in ascertaining the individual strengths or weaknesses that result in either low or high test scale scores. If one or less sequential errors are made, examiners can generally interpret the test as not showing problems indicative of selective attention, response inhibition or visuospatial sequencing. For the most part, when no errors occur that can be tied to specific cognitive deficits, Test A can be considered a general measure of attention control dependent primarily on the individual's sustained attention, visuospatial sequencing and central processing speed.

The purpose of the ACQ scale is to identify any problems related to the underlying integrity of an individual's attention control system. Central processing speed deficits combined with problems with sustained attention are likely to be the primary factors which will result in slow test completion times. However, examiners will need to keep in mind that, in some cases, a very slow reaction time may indicate underlying neurological problems. People can also be challenged by the demand to sustain their attention and use their visuospatial sequencing skills along with selective attention to quickly complete the test task. Impairment in the ACQ can also result from emotional, psychological, and learning disorders. A person with a high level of anxiety may hesitate and respond more slowly during the test due to feelings of insecurity and fear of making incorrect selections. Consequently, it is important for the examiner to carefully observe each individual's behavior and interpret the test results taking into account the factors discussed above.

This individual completed Test A in 36 seconds. Her ACQ scale score was 81 (PR=10). This score fell in the mildly impaired range. This quotient score for the ACQ scale revealed this individual to have

some problems involving her overall attention control. Her cognitive dysfunction suggests she has specific deficits involving mental processing speed and sustained attention.

The cognitive impairments identified by Test A suggest that this individual is likely to be slower than most individuals her age in respect to mental processing speed and is likely to have some difficulty in sustaining her attention at times to simple routine tasks. Consequently, she may show some difficulties in being able to reliably and accurately complete her work in either the home or work environments. Occasionally, she may get off-task and become sidetracked.

During Test A, sequential errors can occur. A sequential error occurs when a line is drawn to the incorrect number in the sequence or an incorrect target is directly selected. For example, when the individual draws a line directly from the number 2 to the number 4, this is classified as a sequential error. When these errors occur, the test taker is immediately stopped and redirected to begin again at the last correct response. Thus, making errors will generally lengthen an individual's test completion time. In test A, she made one sequential error. Making one sequential error is not considered unusual.

Cognitive Flexibility Scale

The Cognitive Flexibility Quotient (CFQ) scale is based on the time it takes the individual to complete Test B. Nine specific cognitive skills are required for an individual to perform well on Test B. These nine skills include selective attention, visuospatial sequencing, fine motor control, response inhibition, sustained attention, central processing speed, alternating attention, visuospatial classification and working memory. The test task requires the individual to locate correct targets amongst the field of targets using their selective attention. The selection of the target in the correct order requires the use of selective attention, visuospatial sequencing, alternating attention, visuospatial sequencing and working memory. The individual must also practice response inhibition to avoid violating the target rule order by selecting a target not in the correct sequence. Individuals will also need to use their sustained attention abilities to facilitate making consistent and accurate responses throughout the test in a timely manner. Overall test score times are dependent on the integration of the individual's central processing speed with the eight other cognitive skills required by Test B. Impairments in either selective attention and/or working memory in combination with visuospatial sequencing or response inhibition deficits are likely to result in sequential errors. Perseverative errors primarily occur due to deficits in alternating attention, visuospatial classification and/or working memory. All errors will require the individual to temporarily stop and start again from the last correct target selected and, thus, result in longer Test B time scores.

Since CFQ is a key component of executive functioning and the scale score is dependent on the individual's overall test completion time, it is important for examiners to use their clinical judgment in ascertaining the individual strengths or weaknesses that result in either low or high test scale scores. Also, if one or less sequential errors are made, examiners can generally interpret the test as not showing problems indicative of selective attention, response inhibition, visuospatial sequencing or working memory, unless two or more perseverative errors occur. When two or more perseverative errors occur then this suggests possible problems with alternating attention, visuospatial sequencing and/or working memory. In general, Test B can be considered to measure cognitive flexibility that is reflective of an individual's sustained attention, visuospatial sequencing, working memory, and alternating attention.

The purpose of the CFQ scale is to identify any problems related to the underlying integrity of an individual's cognitive flexibility skills. Problems with alternating attention, working memory, visuospatial sequencing, central processing speed and the individual's ability to sustain her attention are likely to be the key factors which will result in poor performance on Test B. However, examiners will need to keep in mind that, in some cases, a very slow reaction time suggests possible underlying neurological problems. People can also be challenged by the demand to effectively utilize the combination of cognitive skills required by Test B to quickly complete the test task. An impairment in cognitive

flexibility can also result from emotional, psychological, and learning disorders. A person with learning problems or an emotional disorder may respond hesitantly during the test, because of either confusion or feelings of insecurity. In these types of situations the examiner will need to carefully observe the test taker and clinically evaluate the specific reasons other than cognitive impairments that may contribute to poor test performance.

This individual finished Test B in 108 seconds. Her CFQ scale score was 61 (PR=1). Her CFQ scale score on Test B showed her to be severely impaired. This impairment in her cognitive flexibility skills strongly suggests that she has deficits involving a multitude of cognitive abilities. Her problems have the potential to negatively impact her functioning, because of the limitations in her sustained attention, visuospatial classification, working memory, alternating attention and central processing speed abilities. The effect of these cognitive impairments is highly likely to negatively impact her ability to function in life. Her problems with cognitive flexibility will generally lead to problems with organizing tasks, setting goals, managing her emotional feelings, and getting any assignments she undertakes completed accurately and on time. Typically, she will have problems working quickly and figuring out new or novel tasks.

In Test B, two different types of errors can occur. The sequential errors that may occur in Test A can also be made by test takers in Test B. One other type of error only occurs during Test B. It is referred to as a perseverative error. Perseverative errors occur when an individual does not alternate between numbers and letters in the correct sequence order. An example of this error is when the person draws a line directly from 1 to 2, skipping A completely. All other errors made that occur in Test B would be considered sequential errors. During Test B, she made a total of 5 errors. A total of 2 sequential errors were made. She made 3 perseverative errors while taking this test. This high number of errors was considered likely to have negatively impacted her Test B performance.

Executive Control Scale

The Executive Control Quotient (ECQ) scale score is a global scale based on the total time that it takes to complete both Test A and Test B. There are nine specific cognitive skills that are required to perform well on the MeSA-AE Assist test. These nine cognitive skills include selective attention, visuospatial sequencing, fine motor control, response inhibition, sustained attention, central processing speed, alternating attention, visuospatial classification and working memory. On both Test A and Test B the test takers are required to identify the correct targets based on a rule and will need to utilize their selective attention, visuospatial sequencing, alternating attention, visuospatial classification and working memory in order to make correct choices. They must also apply their response inhibition skills in order selecting an incorrect target and violating the target rule order. An individual's ability to complete the two tests quickly will also depend on their ability to sustain their attention and their overall central processing speed. Impairments in either selective attention and/or working memory in combination with visuospatial sequencing or response inhibition deficits will typically result in sequential errors. Perseverative errors on Test B will primarily occur due to deficits in an individual's alternating attention, visuospatial classification and/or working memory. Since any type of error requires that the test taker temporarily stop and start again from the last correct target selected, errors always result in longer test times.

The ECQ scale is a global composite measure of executive control based on the Attention Control Quotient (ACQ) and the Cognitive Flexibility Quotient (CFQ). The ACQ and CFQ scale interpretations provide the necessary detail to help examiners in ascertaining an individual's strengths or weaknesses that result in either low or high test scale scores. In addition, the differences between these two scales can be used by the examiner to help identify specific skills that need to be remediated when deficits are identified. Thus, the ECQ is a composite measure that takes into account a person's basic attentional functioning when initially faced with having to quickly complete a novel task and combines it with their performance on a significantly more challenging test that specifically requires working memory, alternating attention and visuospatial classification. In the interpretation of the ECQ

examiners will need to keep in mind that, in some cases, a very slow reaction time on both Test A and Test B may indicate underlying neurological problems. People can also be challenged by the demand to effectively utilize the additional cognitive skills required by Test B. Impairments in the ACQ and CFQ can also result from emotional, psychological, and learning disorders. Slow CFQ test completion times can occur for a number of reasons not specifically related to cognitive impairments, including confusion, anxiety, or emotional stress. In these types of situations the examiner will need to carefully observe the test taker and clinically evaluate the specific reasons other than cognitive impairments that may contribute to poor test performance.

She completed Test A in 36 seconds and had an ACQ scale score of 81. She also finished Test B in 108 seconds which resulted in a CFQ scale score of 61. The time it took her to complete both of these tests was 144 seconds and her ECQ scale score was 57 (PR=1) which showed that her executive control abilities were in the extremely impaired range. Moderate differences were found in this individual's attention control in comparison to her cognitive flexibility. The ACQ and CFQ scale scores for this individual differed by 20 points. Her ACQ scale score fell in the mildly impaired range. This individual's cognitive flexibility assessed by the CFQ scale score was in the severely impaired range. This individual had a relative strength in her attention control that was moderately better than her cognitive flexibility skills. She was able to complete the test task more quickly when it was simpler; revealing relative strengths in her selective attention and visuospatial sequencing skills. This individual was found to have major deficits in her overall executive control capabilities. Her extreme level of cognitive dysfunction strongly indicates that she has a number of significant cognitive deficits which will probably impair her functioning.

Given that her performance on Test A fell in the mildly impaired range, her ACQ score indicated that some of the cognitive problems which impair her executive control functioning include specific deficits in selective attention, visuospatial sequencing, sustained attention and/or central processing speed. Even though she has extreme impairments in her global executive control her ability to start and complete her required work in the home or work settings is likely to be only an occasional issue when she is required to do simple tasks. She may though have some difficulty at times maintaining her focus and getting her work done quickly, but for straight forward tasks her potential problems are likely to be fairly minimal. It is when she is faced with more complex and difficult work in the home or work environments that the extreme deficits in her executive control abilities will most likely become evident.

Her cognitive flexibility functioning fell in the severely impaired range, Thus, her CFQ scale score showed that her very limited executive control functioning resulted from significant deficits in her visuospatial classification, working memory, problem solving and/or alternating attention cognitive skills. It would not be considered unusual for her to become easily frustrated or have other problems regulating and controlling her emotions. Her ability to think on her feet and use her working memory skills in order to perform work tasks is likely to be significantly impaired. In addition, problem solving skills along with the adaptability often required to meet work or social challenges would be expected to be an area of concern for her. Appropriate accommodations or interventions to address these areas of concern will need to be considered to help her.

I have reviewed this interpretive report and have modified it as necessary in accordance with my comprehensive evaluation, the client's history, and other relevant clinical data.

John Q. Public Ph.D.
Clinical Psychologist