

The Effectiveness of the Integrated Approach in Eliminating the Stuttering Behaviors in Jordanian Adults who Stutter (A Case Study)

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Abstract: This study aims to demonstrate the effectiveness of the Integrated Approach in eliminating stuttering behaviors in Jordanian adults who stutter. The researchers in this study tracked the change —after applying the Integrated Approach— in percents of syllables stuttered (%ss), the total overall score that is based on the (SSI-3), and the aspects of confrontations of different speaking situations for two individuals, 15 and 19 years old. During the follow-up phase, that was two years long, separated assessments were conducted to see the stability that has been reached at the end of the scheduled treatment sessions. This study suggested that there is a drop in values from *pre* to *post* treatment (from 16% and 14% in reading and conversation in the (%ss) for the first individual, and from 20% and 25% in reading and conversation in the (%ss) for the second individual to 5% for both individuals, and from a score of 27 and 29 in the SSI-3 for the first and second individual, respectively, to 15 for both individuals). It also suggested -through the notes of close persons and the therapist- that those individuals have excellent motivation in contesting different speaking situations in and out of clinic without hesitation or avoidance. These results are consistent with those of previous studies.

Key Words: Stuttering, Multidimensional Factors, Integrated Approach, Stuttering Severity Instrument (SSI-3).

Introduction:

Stuttering is one of the fluency disorders (Justice, 2006, 387) that can be characterized by describing its abnormal behaviors during forward flow of speech, which are; high frequency and/or duration of stoppages (Guitar, 2006). These abnormal behaviors are considered

inappropriate for age, culture, and linguistic aspect, e.g. “dialect” (American Psychiatric Association (APA), 1994; Guitar, 1998).

Guitar (2006) characterized abnormal speech behaviors by the following: (1) *Core behaviors*, like; (a) *Repetition* of the sound, part of word, or one-syllable word, (b) *Prolongation* of the sound during flow of speech (c) *Block* of airflow or voicing in the speech (2) *Secondary behaviors* used by the individuals who stutter at the moment of stuttering (core behaviors) for escaping or avoiding these moments according to the opinion of the individuals who stutter (These behaviors are determined as extra sounds, non-meaningful words, and/or effortful body movements) (3) *Negative feelings and attitudes* concomitant to the core behaviors. These behaviors make the individuals who stutter more frustrated, anxious, embarrassed, insular, and afraid (Guitar, 2006). These negative feelings and attitudes are known to have a negative effect on the social communication, academic, and occupational achievements (American Psychiatric Association (APA), 1994; Guitar, 1998).

Peters and Guitar (1991) classified stuttering into five levels according to age, number, and type of stutter-like disfluencies. These levels include: (1) *Normal disfluency* that appears within the period of 18 months to 6 years, and includes less than 10 disfluencies per 100 words (2) *Borderline stuttering* that appears within the period of 18 months to 6 years, but includes more than 10 stutter-like disfluencies per 100 words with the effort aspect of speech (3) *Beginning stuttering* that appears within the period of 2 to 8 years, and includes more than 10 disfluencies per 100 words with an effort aspect of speech greater than that in the borderline (4) *Intermediate stuttering* that appears within the period of 6 to 13 years, and includes more than 10 disfluencies per 100 words with the same or more severe abnormal speech behaviors than in the aforementioned levels (5) *Advanced stuttering* that appears within the period of 14 years or older, and includes more than 10 disfluencies per 100 words with very severe effort of stutter more than those in the above levels (Peters and Guitar, 1991).

Regarding the onset of stuttering, Andrews et al. (1983) reported that stuttering may appear in any time of the childhood period from 18 months to 11 or 12 years. It is more likely to appear in the period between 2 to 5 years when the child enters within mentally and physically loaded phases of development. When stuttering begins, it may appear for a few days or weeks. It may then disappear for a period ranging from several days up to several months or forever, or it may appear again (Andrews et al., 1983).

Stuttering affects a relatively small percentage of people; with an incidence rate of (1%) and a prevalence rate of approximately (5%)

of the populations worldwide (Bloodstein, 1995). In children younger than 10 years, the incidence rate of stuttering is about (1.5%), and about (0.5 to 0.7%) in older children. Males are reported to be affected more than females, with a male-female ratio of 3 or 4 to 1 (Craig et al., 2002).

Treatment of older individuals who stutter includes many approaches as; stuttering modification therapy, fluency shaping, the Integrated Approach (Guitar, 2006), pharmaceutical and medical intervention; through using some medications (Costa and Kroll, 2000; Riley et al., 2001), Camperdown program (O'Brian et al., 2009), Lidcombe program (Onslow, 2003), Altered Auditory Feedback (AAF) (Antipova et al., 2008), or the Speech Easy device (SE) (Pollard et al., 2001).

The integrated approach is a combination between two approaches: stuttering modification therapy (getting to know stuttering) and fluency shaping (increasing the fluency of speech) (Guitar, 2006). This means that the Integrated Approach focus is on increasing the knowledge of stuttering, reducing negative feelings, and building speech fluency (Guitar, 1998).

Many of speech-language therapists are interested in using the integrated approach with their individuals who stutter because it addresses the multidimensional nature of stuttering, besides its proved therapeutic impact (Cooper and Cooper, 1985; Norris and Hoffman's, 1993; Smith and Kelly's, 1998; Guitar, 2006). In fact, the integrated approach was adopted by the American Speech-Language-Hearing Association's guidelines for practice in stuttering treatment (Starkweather et al., 1995).

The integrated approach has been proved to be effective in improving fluency, cognitive, emotional, and social factors in individuals who stutter (Guitar, 1998; Healey et al. 2004; Craig, 2007). Healey et al. (2001) showed that using an integrated approach increased the school-age individuals' interests in terms of their motivation for therapy. They also proved that the treatment program (the Multidimensional approach) was more enjoyable using the contextualized topics. Healey et al., (2004) showed that the percents of syllable stuttered (% ss), the stuttering severity, the total overall score of the stuttering severity instrument (SSI-3), and the negative feelings were decreasing in values from pre to post treatment when confronting the different speaking situations and avoidance.

Specifically, the aim of this study is intended to assess changes in the percents of syllables stuttered (% ss), the total overall score that is based on the (SSI-3), and the aspects of confrontations of different speaking situations pre and post treatment utilizing the Integrated

Approach in treating Jordanian adults who stutter and whether these changes stabilizes or improves in the subsequent months and years.

Methodology:

This study is based on two longitudinal male individuals with different ages; 15 and 19 years of age when they attended the evaluation session. Both were high school students.

Both individuals were self-referred to the speech clinic at the University of Jordan to evaluate their problem. A 100-words reading and spontaneous speech samples were recorded using a digital voice recorder (Olympus, WS-600S, China) for evaluation during one-hour evaluation session. They were diagnosed by a certified speech-language therapist as *Moderate Advanced Stuttering* based on the SSI- 3 (Riley, 1994). The Stuttering Severity Instrument-3 (SSI-3) — designed by Riley — includes three dimensions; frequency of stuttering, duration of stuttering, and physical concomitants. The total overall score of (SSI-3) is based on the aforementioned dimensions, and this overall score is the best indicator for severity ratings (e.g., mild, moderate, and severe). This standardized measuring scale is an important measure for the progress during therapy (Guitar, 2006).

In terms of evaluating the impact of stuttering on both individuals' life span, notes were taken by the speech-language therapist by putting the individuals in some speaking situations (e.g. talking on the phone, conducting a dialogue with a number of people of both genders, answering random different questions. making several presentations in front of a large group of students) during one-hour evaluation sessions, and their reactions were recorded.

After the evaluation process, both individuals were enrolled in a two-phase therapy program: a therapy phase and a follow-up phase. The therapy phase lasted for 6 months and was composed of extended 50-minutes therapy sessions, twice a week; where discourses, picture cards, and open-ended questions were used. During this phase, the researchers in this study have chosen the Integrated Approach designed by Guitar (2006). The Integrated Approach is composed of; 1) identification of stuttering, 2) desensitization from stuttering, 3) speaking fluently by using fluency enhancing techniques (slow rate, easy onset, and soft articulatory contact), 4) modifying the moment of residual stuttering by using cancellation, pullout, and/or preparatory set techniques to reach a more realistic long-term goal regarding the adult-age individuals who stutter, this realistic goal is controlled fluency, 5) generalizing controlled fluency in all situations and with different listeners inside and outside the clinic, and 6) maintaining the improvement that has been reached in the end of the therapy phase.(Guitar, 2006).

The follow-up phase, on the other hand, lasted for 2 years to monitor improvement in the fluency of speech, social, and environmental factors. This was performed by recording and analyzing the spontaneous speech and reading samples at each session in order to know the percents of syllables stuttered and the severity of stuttering based on SSI-3 scale, through putting both individuals within different speaking situations. This follow up phase of therapy was spaced at different intervals; the first six months included one 50-minute session per week, the following six months included one 50-minute session per two weeks, and one session per a month for the last twelve months.

The progress of both individuals was evaluated by conducting a systematic evaluation each eight therapy sessions by counting the frequency of the syllables stuttered within two samples: reading and spontaneous speech, using the (SSI-3) scale, and noticing the improvement during talking with strangers in different speaking situations. The progress of both individuals was also evaluated through the notes of close persons of both individuals regarding their reactions during the confrontations of the different speaking situations.

Results:

Information that has been collected from both individuals at the evaluation stage represents the percents of syllable stuttered, which was 16% in the reading sample and 14% in the spontaneous speech for the first individual with an SSI-3 scale score of 7 for both samples, and 20% in the reading sample and 25% in the spontaneous speech for the second individual with an SSI-3 scale score of 8 for both samples.

The syllables stuttered in both individuals are composed of some core stuttering behaviors that are accompanied with many of physical concomitants and non-meaningful speech interjections. In the first individual, the type of core stuttering behaviors was tense long block only, representing 55% of all the syllables stuttered in a reading sample and 47% of all the syllables stuttered in a spontaneous speech sample. This behavior, the tense long block, was accompanied with non-meaningful speech interjections, representing 45% of all the syllables stuttered in a reading sample and 53% of all the syllables stuttered in a spontaneous speech sample. Regarding the second individual, the types of core behaviors were part-word repetition representing 30%, tense long block representing 43%, and non-meaningful speech interjections representing 27% of all the syllables stuttered in a reading sample, and were part-word repetition representing 30%, tense long block representing 40%, and non-meaningful speech interjections representing 30% of all the syllables stuttered in a spontaneous speech sample.

The mean duration of the three longest stutters counted by using the digital voice recorder in both individuals was one second, this duration mean represented a score of 3 in the duration score section of the SSI-3 scale.

Regarding the physical behaviors (escaping or avoiding the moment of stuttering), the therapist noticed that there were several distracting physical behaviors during the evaluation stage, like; jaw jerking, lip pressing, poor eye contact, and arm & hand & leg movements that represented a score of 10 according to SSI-3 scale in both individuals. Following that, the therapist determined the total overall score -based on the aforementioned scores of the SSI-3 scale- which was 27 and 29 for the first and second individual, respectively. These values according to SSI-3 scale represent the percents 60% and approximately 69%, respectively, with a Moderate severity in both individuals.

The therapist took notes regarding the impact of the disorder on their life during one-hour evaluation session, which showed very strong negative impact, appearing in hesitating when confronting the speaking situations or avoiding them.

At the end of treatment (the first six months), a clinically significant drop in the percents of syllables stuttered and scores of SSI-3 scale was observed (therapist observation). The percents of syllables stuttered decreased to 5%, represented a score of 4 and 5 according to SSI-3 scale in the reading and spontaneous speech samples, respectively, for both individuals. Dropping to 5% means reaching the ability to modify the moment of stuttering by using the two modification techniques: pullout and/or preparatory set in each of the reading and spontaneous speech samples.

The percent of syllables stuttered (5%) for both individuals is composed of easy short blocks (pauses) without part-word repetitions and without non-meaningful interjections in both samples.

The duration score for both individuals decreased to the score of 1, this means that the mean duration of the three longest stutters became fleeting (less than half second). The physical concomitants became slightly noticeable, dropping to the score of 5. The total overall score became 15 for both individuals, approximately estimated to 4% according to SSI-3 scale, and the severity of the stuttering changed to very mild stuttering.

The size of the avoidance to different situations and attitudes became almost absent when the individuals talk on the phone, or conduct a dialogue with a number of people of both genders. The individuals answered, without hesitation, random different questions. In addition to that, they made several presentations in front of a large group of students within the University of Jordan. These results were

observed inside and outside the clinic. The researchers listened to close people about the two individuals' general impression with regard to their ability to control their speech and to maintain fluency outside the clinic and their answer was that they became able to control their speech and listening to them has become something fun and non-repellent.

The two individuals were observed during the follow-up phase to maintain the improvements that have been reached with interval assessments during a period of two years.

Discussion:

This study is constructed to explore the effectiveness of the Integrated Approach on Jordanian adults who stutter through comparing the pre and post-treatment percents of the syllables stuttered, SSI-3, and the impact of the stuttering on two adult males individuals' life by knowing the size of the avoidance to different situations and attitudes, and what happened within these parameters after the treatment.

The study showed that there is a significant clinical drop in the aforementioned values. The percents of syllables stuttered for the first individual were dropping from 16% and 14% (score of 7 for each sample according to the SSI-3 scale) in the reading and the spontaneous speech samples, respectively, to 5% (score of 4 and 5, respectively) in each sample with modifying the residual stutters by using pull out and/or preparatory set strategies. The values for the second individual were also dropping from 20% and 25% (score of 8 for each samples according to SSI-3 scale) in the reading and the spontaneous speech samples, respectively; to 5% (score of 4 and 5 for each samples, respectively) with the modification of the residual stutters with the same strategies of modification in the first individual.

The abnormal speech behaviors that determine the syllables stuttered in the first individual decreased from tense long block with percent 55% of all syllables stuttered in a reading sample and 47% of all syllables stuttered in a spontaneous speech sample to the easy short block with percent 5% in each sample, whereas, the non-meaningful interjections with percent 45% in a reading sample, and 53% in a spontaneous speech sample decreased to percent 0% in each sample. Similarly, the abnormal speech behaviors in the second individual decreased from part-word repetition with percent 30%, tense long block with percent 43%, and non-meaningful speech interjections with percent 27% of all syllables stuttered in each one in a reading sample, and from part-word repetition with percent 30%, tense long block with percent 40%, and non-meaningful speech interjections with percent 30% of all syllables stuttered in each one in a spontaneous speech

sample to the easy short block with percent 5% in each sample without other behaviors.

The duration score of the three longest stutters for both individuals decreased from score of 3 to the score of 1, and the mean length of the three longest stutters became fleeting (less than half second). As well as, the physical concomitants reduced from distracting physical behaviors that were accompanied with the abnormal speech behaviors with score of 10 to the slightly noticeable with score of 5.

The severity of stuttering of the two individuals changed from moderate to very mild stuttering as evidenced by the drop in the total overall scores from 27 (60%) and 29 (almost 69%), respectively, to 15 (approximately 4%) in both individuals. This drop in the total overall score in the Severity Stuttering Instrument (SSI-3) and its rating means that there is an improvement in the fluency and a change in the struggle aspects of speech (abnormal speech behaviors). This drop also means that there is a reduction of negative emotions and cognitive restructuring (thinking about stuttering). The improvement of the affecting factors on stuttering (negative feelings) was verified by the direct observation from the researchers of this study to both individuals through encounters of the different speaking attitudes and situations, and by listening to the close listeners' feedbacks about the individuals' performance during these encounters. This study showed that there is a desire from these individuals to confront the different speaking situations and attitudes without avoidance and fear inside and outside the clinic.

This study showed that there is a positive impact of the Integrated Approach after using it in the treatment of two Jordanian adults who stutter. There are -to the best of authors' knowledge- no studies addressing the Integrated Approach in the treatment of adults who stutter or any other age groups in Jordan. Other studies in other countries are related or close to this study and its outcomes in general; without pointing out values or scores.

Healey et al. (2004) reported that there is improvement in the overall communication of the individuals who stutter regardless the age after using the integrated approach in the treatment, because it is dealing with multidimensional components of stuttering (cognitive, affective, linguistic, motor, and social) simultaneously, and proved that this approach assists the individuals who stutter to generalize the improvement that have been reached to different speaking situations and to monitor their performance. Also, Healey et al. (2004) showed that the percents of syllable stuttered (% ss), the stuttering severity, the total overall score of the stuttering severity instrument (SSI-3), and the negative feelings were decreasing in values from pre to post treatment when confronting the different speaking situations and avoidance,

whereas, the unidimensional approaches (e.g. Stuttering modification therapy and Fluency shaping therapy) can make significant drop in the part of the stuttering components only, not in all part (aspects) like in the multidimensional approaches.

These aforementioned outcomes were confirmed or stated by others as Cooper and Cooper (1985), Norris and Hoffman's (1993), Smith and Kelly's (1998), Guitar (1998), and Craig (2007).

The previous outcomes were also confirmed by Healey et al. (2001) which also showed that using an integrated approach increased the school-age individuals' interests in terms of their motivation for therapy. They also proved that the treatment program (Multidimensional approach) was more enjoyable using the contextualized topics.

Conclusion:

The integrated approach is one of the best therapeutic approaches for treating stuttering. It is effective, strong, and rapid in treatment. Many researchers (e.g. Cooper and Cooper (1985), Norris and Hoffman's (1993), Starkweather and Givens-Ackerman (1997), Smith and Kelly's (1998), Guitar (1998), Craig (2007), Healey et al. (2001), and Healey et al. (2004)) had chosen the integrated approach as the best choice for treating stuttering or as a subject for their studies, and proved its effectiveness in treatment of stuttering individuals in different ages.

In Jordan, and to the best of the authors' knowledge, there are no studies addressing the integrated approach and its effectiveness in treatment of the adults who stutter. This study was constructed to prove the effectiveness of the integrated approach on this age group, and its findings were consistent with previous related studies like; Guitar (1998), Healey et al. (2004), and Craig (2007) who confirmed the Integrated Approach has been proved to be effective in improving fluency, cognitive, emotional, and social factors in individuals who stutter, and pointed out to a significant drop in the percents of syllable stuttered (% ss), the stuttering severity, the total overall score of the stuttering severity instrument (SSI-3), and the negative feelings for different age groups included adult-age.

This study is considered a preliminary outline for Jordanian clinicians to assist them during making therapeutic decisions when evaluating adults who stutter.

Future research:

Future studies are recommended to recruit a greater number of subjects so that generalization of results can be feasible. Additionally,

future research should evaluate longer-term treatment outcomes (two years after the therapy program).

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References:

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders (4th ed.)*. Washington, DC: Author.
- Andrews, G., Craig, A., Feyer, A. M., Hoddinott, S., Howie, P. M., and Neilson, M. D. (1983). Stuttering: A review of research findings and theories circa 1982. *Journal of Speech and Hearing Disorders*, 48 (3), 226-246.
- Antipova, E. A., Purdy, S.C., Blakeley, M., Williams, S. (2008). Effects of altered auditory feedback (AAF) on stuttering frequency during monologue speech production. *Journal of Fluency Disorders*, 33 (4), 274-290.
- Bloodstein, G. (1995). *A handbook on stuttering (5th ed.)*. San Diego, CA: Singular.
- Bobrick, B. (1995). *Knotted tongues: Stuttering in history and the quest for a cure*. New York: Simon and Schuster.
- Cooper, E. B., and Cooper, C. S. (1985). *Cooper personalized fluency control therapy*. Allen, Tx: DLM.
- Costa, D., and Kroll, R. (2000). Stuttering: An update for physicians. *Canadian Medical Association Journal*, 162 (13), 1849-1855.
- Craig, A., Hancock, K., Tran, Y., Craig, M., and Peters, K. (2002). Epidemiology of stuttering in the community across the entire life span. *Journal of Speech, Language, and Hearing Research*, 45 (6), 1097-1105.
- Craig, A. (2007). Evidence-based practice in the treatment of adolescent and adult stuttering: what do we know and what works?. *ASHA*.
http://www.asha.org/Events/convention/handouts/2007/1718_Craig_Ashley/
- Guitar, B. (1998). *Stuttering: An integrated approach to its nature and treatment (2th ed.)*. Baltimore: Lippincott Williams & Wilkins.
- Guitar, B. (2006). *Stuttering: An integrated approach to its nature and treatment (3th ed.)*. Philadelphia, PA: Lippincott Williams & Wilkins.
- Healey, E. C. and Scott, L. A. (1995). Strategies for Treating Elementary School-Age Children Who Stutter: An Integrative Approach. *Language, Speech, and Hearing Services in Schools*,

- Vol 26. *Journal of American speech-Language-Hearing Association*, 26 (2), 151-161.
- Healey, E.C., Scott Trautman, L. & Panico, J. (2001, October). *A model for manipulating linguistic complexity in stuttering therapy*. International Stuttering Awareness Day Online Conference, Mankato State University, Mankato, MN.
- Healey, E.C., Scott-Trautman, L., & Susca, M. (2004). Clinical Applications of Multidimensional Approach for the Assessment and Treatment of Stuttering. *Contemporary Issues in Communication Science and Disorders*, 31 (Spring), 40-48.
- Justice, L. M. (2006). *Communication Sciences and Disorders: an introduction (1st ed.)*. New Jersey, Upper Saddle River: Pearson Education, Inc.
- Norris, J., and Hoffman, P. R. (1993). *Language intervention for school-age children*. San Diego, CA: Singular.
- O'Brian, S., Packman, A. & Onslow, M. (2009). *The Camperdown Program*. In B. Guitar and R. McCauley (Eds.), *Treatment in Stuttering: Established and emerging approaches*. Baltimore, MD: Lippincott Williams & Wilkins.
- Onslow, M. (2003). *Overview of the Lidcombe Program*. In Onslow, M., Packman, A. & Harrison, E. (Eds.) *The Lidcombe Program of early stuttering intervention: A clinician's guide*. Austin, TX: Pro-Ed.
- Peters, T. J., & Guitar, B. (1991). *Stuttering: An integrated approach to its nature and treatment (3th ed.)*. Baltimore: Lippincott Williams & Wilkins.
- Pollard, R., Ramig, P. R., Finan, D., and Ellis, J. B. (2001). Recent study reports on Speech Easy use within extra clinical environments. *The Stuttering Foundation*. <http://www.stutteringhelp.org/recent-study-reports-speecheasy-use-within-extra-clinical-environments>
- Riley, G. (1994). *Stuttering Severity Instrument for Children and Adults (3th ed.)*. Austin, TX: Pro-Ed.
- Riley, G., Maguire, G., Franklin, D., and Ortiz, T. (2001). Medical perspectives in the treatment of stuttering. *Contemporary Issue in Communication Science and Disorders*, 28 (Fall), 104-110.
- Smith, A. & Kelly, E. (1998). *Stuttering: A dynamic, multifactorial model*. In R. Curlee & G. M. Siegel (eds.) *Nature and Treatment of Stuttering: New Directions*. Boston: Allyn & Bacon.
- Starkweather, W., St. Louis, K., Blood, G., Peter, T., Westbrook, J., Gregory, H., Cooper, G., Multidimensional Model of Stuttering 25 & Healey, E. C. (1995). Guidelines for practice in stuttering treatment, *Journal of American speech-Language-Hearing Association*, 37(Supplement 14), 26-35.