



A Selected Review and Comment on Stuttering Treatment Measurements and Therapy Effectiveness

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Abstract

Discrepancies between the reports of successfully implemented stuttering treatments conflict with the presence and prevalence of overt stuttering behaviors found in adult members of the stuttering population. Research is reviewed suggesting that conventional stuttering therapies may be far less effective at long term amelioration than reported, as well as create unnatural, awkward, and potentially unfeasible post-therapeutic speech. Literature challenging the collection and interpretation of treatment efficacy data is revisited, citing inherent flaws such as the Hawthorne effect and cognitive dissonance which may contaminate data and post-treatment efficacy measurements. A comprehensive analysis investigating the effectiveness of stuttering treatments, which suggests that nearly every type of stuttering therapy temporarily reduces the symptoms of stuttering, is discussed. With most plausible therapeutic approaches producing comparable short-lived results, it may be worthwhile integrating promising alternative treatments; two such candidates include pharmaceuticals and prosthetic fluency enhancing devices, as they may produce more stable and natural sounding speech and may be more resistant to relapse and measurement artifacts.

There is an apparent discrepancy between the numerous positive reports of successful stuttering treatment [3, 16-17] and the accepted presence and prevalence of adults in the stuttering population who continue to overtly stutter. Even though conventional stuttering therapies are documented as effective in post-therapy testing and video documentation, many clients evidently find certain stuttering treatments to be ineffective at significantly reducing or eliminating stuttering in real life applications or over extended periods of time [6, 7, 14, 16]. Furthermore, many stuttering therapies create post-therapeutic speech that is more unnatural than the stuttered speech it replaces [11, 13] by using therapy targets that are awkward and potentially inapplicable in the real world [16]. Despite noble intentions, therapists and researchers claiming therapeutic successes cannot easily account for the continuation of stuttering relapse or the unnatural speech present in our clients post-treatment.

While few researchers directly challenge the efficacy of stuttering therapies, select data appears to dispute the value of our current behavioral stuttering treatment. One such example is a study by Blood, Blood, Bennett, Simpson, & Susman (1994), which included basic personal information from participants used in their research. While Blood et al. were not measuring treatment efficacy, the reported participant demographic data potentially reveals the therapeutic experience of many who stutter (see table 1). For example, participants found in Blood et al., (1994) averaged seven years of therapy within 21 years of life, yet continued to speak with a moderate stuttering severity. Although this data could be interpreted as a potential improvement from an even more severe baseline of pre-treatment speech, the question of why an average of seven years of treatment only yields moderate results still remains. Moreover, while it could be optimistically noted that five of the 11 participants were still enrolled in treatment during the time of data acquisition, hope for significant improvement seems improbable after so many years of relatively ineffective treatment.

Discrepancies between participant demographic data reported in Blood et al., (1994) and reports of efficacious stuttering treatments [3, 16-17] may be due to certain inherent difficulties in measuring stuttering treatment. One recently noted potential confound in the measurement of stuttering treatment efficacy is the Hawthorne effect, which is a documented phenomenon that affects personal task performance by a complex pattern of human interrelations [4, 5, 18]. The Hawthorne effect applied to stuttering treatment takes advantage of the disorder's ephemeral nature via the increased use of word substitutions and circumlocutions, and exaggerated fluency techniques while being monitored by a clinician. Consequently, the Hawthorne effect may contaminate stuttering treatment measurements due to the special relationship the clinician has with the client, which in itself is sufficient to temporarily change the clients' speaking behaviors and temporarily reduce stuttering severity during monitored conditions, such as post-testing procedures.

Participant	Age	Years of Therapy	Current Severity
1	18	8	Moderate
2	19	4	Mild
3	19	9	Moderate
4	20	8	Severe
5	20	5	Severe
6	20	2	Mild
7	20	2	Mild
8	20	8	Moderate
9	21	7	Severe
10	24	13	Severe
11	36	11	Moderate
	Mean Age	Mean Length of Therapy	Mean Severity
	21.55	7	Moderate

Table 1. Age, years of therapy, and current severity is listed for participants of Blood et al., (1994).

Another phenomenon that may taint the measurement of treatment efficacy is cognitive dissonance, which suggests that people often adjust their thinking to reduce internal psychological tension [8-10]. From this perspective, it is possible that stuttering clients overestimate the value of treatment during post-treatment efficacy surveys in order to rationalize their hope, emotional, and financial commitments to both the therapy and the therapist, regardless of the physical reality. In summary, one could speculate that the discrepancies between the reports and the reality of stuttering treatment efficacy may be rooted in the post-treatment measurements of therapeutic artifacts and confounds rather than lasting real-life changes.

Further insight into the review of stuttering treatment efficacy can be found in Bloodstein's (1995) examination of 129 different stuttering therapies (not including drug treatments) consisting of at least 4662 participants [2]. A handbook on stuttering (Bloodstein, 1995) documents that nearly every different type of treatment included in the analysis reports post-therapeutic success (pp. 453-473). While these results may be questioned by data that appears to challenge stuttering treatment efficacy [1, 6, 7, 14], Bloodstein illustrates that almost every type of treatment seems to yield similar temporary success. Furthermore, it was suggested that "therapy itself, apart from what is done in therapy, has considerable capacity for effecting change" (p. 438), thus indicating that therapy techniques may play a secondary role to the therapeutic process itself. In addition, Bloodstein proposed "that almost any number of similar (therapy) methods that we could think of on the spur of the moment might have an equal chance of helping some stutterers" (p. 438), thereby speculating that specific therapy techniques are not critical for stuttering reduction. Therefore, it could be concluded that the therapeutic process can achieve limited and temporary reductions of stuttering behaviors, it is uncertain what role the actual therapy techniques play within the context of the therapeutic process.

The lack of a widespread adoption of a single (or even a few) stuttering treatment(s) yielding lasting natural sounding fluent speech suggests an unspoken and relatively uncited inadequacy of the

conventional speech therapy offered to the stuttering population. It remains to be seen whether we can expect significant improvements from our present stuttering therapies, even with personalized changes and holistic modifications. As the evolution of stuttering treatment has failed to conclusively show significant improvements in long-term treatment efficacy, it may be worth reassessing the importance of behavioral and motoric treatments in stuttering management. While the notion of stuttering treatment should not be abandoned, it may be worthwhile to integrate promising alternative treatments, such as pharmaceuticals [15] or prosthetic fluency enhancing devices [12], which may be more resistant to relapse and measurement artifacts.

References

- [1] Blood, G. W., Blood, I. M., Bennett, S., Simpson, K. C., & Susman, E. J. (1994) Subjective anxiety measurements and cortisol responses in adults who stutter. *Journal of Speech and Hearing Research*, 37(4), 760-768.
 - [2] Bloodstein, O. (1995) *A handbook on stuttering* (5th ed.) Chicago, IL: The National Easter Seal Society.
 - [3] Boberg E., & Kelly, D. (1994) Long-term results of an intensive treatment program for adults and adolescents who stutter. *Journal of Speech & Hearing Research*, 37(5), 1050-1059.
 - [4] Bouchet, C., Guillemin, F., & Briancon, S. (1996) Nonspecific effects in longitudinal studies: impact on quality of life measures. *Journal of Clinical Epidemiology*, 49(1), 15-20.
 - [5] Campbell, J. P., Maxey, V. A., & Watson, W. A. (1995) Hawthorne effect: implications for prehospital research. *Annals of Emergency Medicine*, 26(5), 590-594.
 - [6] Craig, A. R., & Calver, P. (1991) Following up on treated stutterers: studies of perceptions of fluency and job status. *Journal of Speech and Hearing Research*, 34(2), 279-284.
 - [7] Craig, A. R., & Kearns, M. (1995) Results of a traditional acupuncture intervention for stuttering. *Journal of Speech & Hearing Research*, 38(3), 572-578.
 - [8] Draycott, S., & Dabbs, A. (1998a) Cognitive dissonance. 1: An overview of the literature and its integration into theory and practice in clinical psychology. *British Journal of Clinical Psychology*, 37(3), 341-353.
 - [9] Draycott, S., & Dabbs, A. (1998b) Cognitive dissonance. 2: A theoretical grounding of motivational interviewing. *British Journal of Clinical Psychology*, 37(3), 355-364.
 - [10] Festinger, L. (1957) A theory of social comparison process. *Human Relations*, 7, 117-140.
 - [11] Franken, C. F., Boves, L, Peters, H. F. M., & Webster, R. L. (1992) Perceptual evaluations of the speech before and after fluency shaping therapy. *Journal of Fluency Disorders*, 17, 223-241.
 - [12] Hargrave, S., Kalinowski, J., Stuart, A., & Armson, J. (1994) Effect of Frequency-Altered Feedback on Stuttering Frequency at Normal and Fast Speech Rates. *Journal of Speech and Hearing Research*, 37, 1113-1119.
 - [13] Kalinowski, J. S., Noble, S., Armson, J., & Stuart, A. (1994) Naturalness ratings of the pretreatment and posttreatment speech of adults with mild and severe stuttering. *American Journal of Speech-Language Pathology*, 3, 61-66.
 - [14] Kuhr, A. (1994) The rise and fall of operant programs for the treatment of stammering. *Folia Phoniatica et Logopedica*, 46(5), 232-40.
 - [15] Maguire, G. A., Riley, G. D., Franklin, D. L., & Gottschalk, L. A. (2000) Risperidone for the Treatment of Stuttering. *Journal of Clinical Psychopharmacology*, 20, (4), 479-482.
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- [16] Onslow, M., Costa, L., Andrews, C., Harrison, E., & Packman, A. (1996) Speech outcomes of a prolonged-speech treatment for stuttering. *Journal of Speech & Hearing Research*, 39(4), 734-739.
- [17] Ryan, B. P., & Van Kirk Ryan, B. (1995) Programmed stuttering treatment for children: comparison of two establishment programs through transfer, maintenance, and follow-up. *Journal of Speech & Hearing Research*, 38(1), 61-75.
- [18] Vahl, C. F., Osswald, B. R., Meinzer, P., de Simone, R., Thomas, G., & Hagl, S. (1997) Internal quality assurance or Hawthorne effect? *Langenbecks Archiv fur Chirurgie*, 114, 260-266.
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