

A Comparative Study of AIT Devices: The Earducator and Auditory Integration Modulator (AIM)

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Background

Auditory Integration Training (AIT) is an intervention that uses specially modulated and filtered music to retrain an individual's ability to process sound input. Dr. Guy Berard, a French ear, nose, and throat (ENT) doctor, developed the Berard method of AIT in the 1960's (Berard, 1993). He and other qualified instructors have trained practitioners to provide the intervention internationally and there are now over three hundred Berard AIT practitioners worldwide. The benefits of AIT are well documented by neuroscience researchers, educators, and other professionals (Sokhadze, et al, 2016; Sokhadze, et al, 2015; Edelson, et al, 1999).

The intervention was first provided in the US in 1991. A French-made device known as the Audiokinetron was developed by Dr. Berard and was in wide use around the world. In 2001, a second device, developed by Tim Hagen (Hollagen Designs, CC.), was approved for Berard AIT after completion of a comparison study with the Audiokinetron. Currently, the Earducator has been the primary device used by practitioners around the world.

In 2017, an AIT sound stimulation system, known as the Auditory Integration Modulator (AIM) was developed in Spain by WHAT Education System. Berard AIT devices are produced solely for educational purposes and therefore do not fall within the jurisdiction of the FDA (Munzner,1999). In order for equipment to be approved for use with the Berard AIT method, a comparison study must be completed to determine if the new equipment produces results equivalent to that achieved by the current equipment being used. Upon request by the manufacturer of the AIM, a study was conducted in order to evaluate the benefits of the AIM compared with the Earducator.

Method

A study using the AIM was developed to compare results with the Earducator. The study population consisted of individuals diagnosed with autism, learning disabilities, and attention deficit disorder (ADD) who were already planning to have AIT. There was a total of twenty-one subjects ranging in age from three years to sixty-two years with completed pre-post data forms.

The individuals were randomly assigned to use either the Earducator or the AIM. Berard practitioners in different countries participated to ensure that generalized results were

obtained. These practitioners selected the monitoring tests appropriate for the individuals, however all subjects were monitored with the Aberrant Behavior Checklist (ABC) and the Comprehensive Performance Index (CPI). The tests were administered immediately prior to starting AIT, and at one month, and three months after receiving AIT. This evaluation schedule has shown that the benefit over time is progressive though the rate of change gradually decreases.

AIT sessions were scheduled based on requests from clients for AIT. Participants were advised of the study and consented to participate without knowing whether the AIM or the Earducator would be used. Participants completed baseline and follow-up evaluations. The study started in 2019 and was completed in 2021.

The study procedure obtained baseline data for everyone in the study using relevant rating forms. AIT was then provided following the method of Dr. Berard. The individuals first had listening evaluations and/or ear/hearing health evaluations performed by an audiologist or healthcare practitioner provided immediately prior to the start of listening sessions. The individuals then listened to specially modulated and filtered music from either the Earducator or AIM for two 30-minute sessions per day separated by at least 3 hours, for a total of 10 hours of listening within a 12-day period. At the mid-point of the listening, a second listening evaluation was performed by the audiologist and results were used to make adjustments to filters or volume. At the completion of ten listening hours, a third listening evaluation was performed.

Results

Berard practitioners used the Aberrant Behavior Checklist (ABC) and the Comprehensive Performance Index (CPI) as an evaluation of AIT's effectiveness. A total of twenty-one subjects completed the baseline and follow-up questionnaires with ten using the Earducator and eleven using the AIM. The median scores for each group as measured by the ABC are shown below on Figure 1.

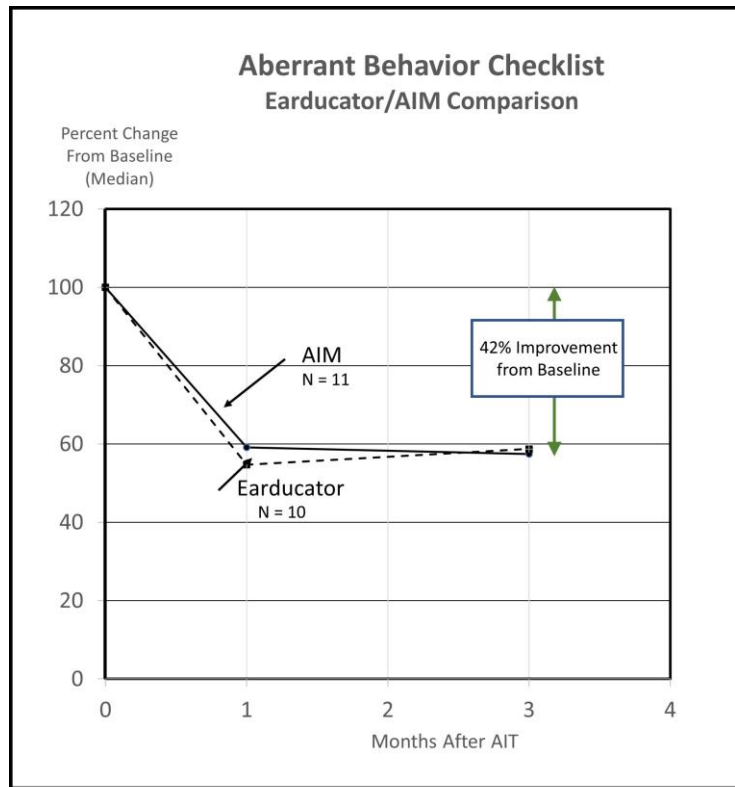


Fig. 1

The CPI mean results for the Educator and AIM populations are presented in Figure 2.

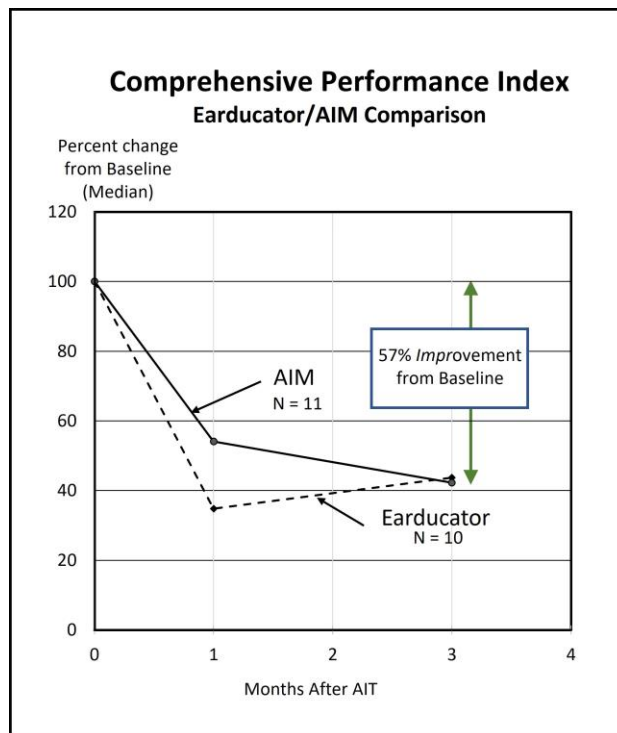


Fig. 2

The trend of the AIM data agrees well with that of the Earducator. The results from the study show particularly good agreement between the performance of the two devices. The differences observed are to be expected with the relatively small sample size of the study and because median scores are presented.

The anecdotal reports from practitioners using the AIM are supported by the study results which were positive and consistent with that of Earducator. During the AIT training period and throughout the follow-up period, comments and feedback were consistent with that received from earlier studies using the Earducator.

Conclusion

This study showed the AIM to be equivalent to the Earducator in producing educational benefits for AIT recipients when evaluated by the ABC and CPI evaluation tools discussed above. Based on this study, the International Berard AIT Representative, Kristin Keller, has approved the AIM for use with the Berard method of AIT.

References

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