

Table with a Half-oval Hole as Individual Treatment Table of ABA Therapy for Autistic Children in Indonesian Autism Therapy Center as an Effective Design to Overcome Behavior

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Abstract

ABA (Applied behavior analysis) therapy introduced by Ivar Lovaas is a widely used method for autism therapy in the world due to its success rate. In this therapy, a table is used during individual treatment as a medium for giving instruction and performing tasks between a therapist and an autistic child. In general, this table is similar to ordinary tables that have rectangular or circular top surfaces and dimensions appropriate for children. However, in Indonesia, the table used is usually modified with a half-oval hole at the side that faces the child. This study discusses the effects of such a table for autism therapy and its effective use for autism therapy. FGD (focus group discussion) was conducted with eight experts in autism therapy in Surakarta. They were therapists, psychologists, head of autism therapy center, and a professor in autism. Almost all agreed that it is necessary to make a half-oval hole on one side of the table to overcome problems such as children's minimum involvement during therapy, intention to leave the table, lack of concentration, and even pushing away the table. This kind of table encourages children to be more engaged in therapy activities. Using the table, the closer distance between the therapist and the student/patient was useful for therapist to instruct and manage the child's behavior. However, it is necessary to maintain the children's relaxing and non-depressing condition, given that basic principle of behavior therapy is to provide children a space to explore and develop.

Keywords: Table, ABA (Applied behavior analysis), therapy, autism

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Introduction

Since ABA (Applied behavior analysis) therapy method introduced by Ivar Lovaas successfully treats ASD (Autism syndrome disorder), this approach became popular in that field. This approach is considered more comprehensive, efficient, effective, and flexible, having positive reinforcement, and helpful for facilitator to teach and understand behavior (Walsh, 2011; Barbaresi et al., 2006; Motiwala et al., 2006; Larsson, 2013). In this therapy, a table is sometimes used during individual treatment as a medium for giving instruction and performing tasks between a therapist and autistic students or patient. Since the individual assessment is an important factor in the ABA approach, it is necessary to provide a proper table design to encourage the achievement of the treatment goal.

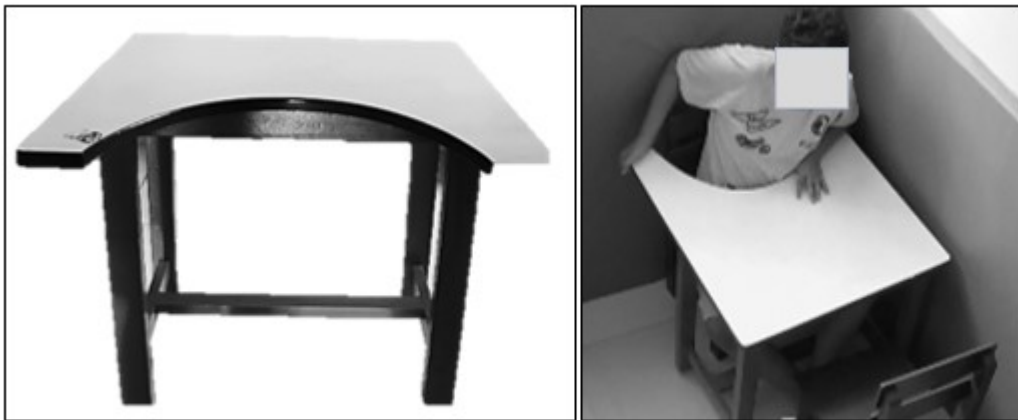


Figure 1. Table with oval hole

Generally, a table of individual treatment is similar to ordinary tables that have rectangular or circular top surface. However, in Indonesia, the table is usually modified with a half-oval hole at the side that faces a student/patient (Figure 1). This design aims to keep the student/patient sitting on the chair while his/her body is confined table hole. This also allows better eye contact between a student/patient and the therapist (Sari, 2011). The therapist can push the table to the wall while the student/patient will be forced in that position. This may not be in line with the principle of ABA, i.e., to provide freedom to the student/patient. However, this practice can overcome autistic student/patient's behavioral outburst and help the therapist doing her/his work easier. Therefore, the goal of assessment would be reached smoothly by using the table with oval hole.

To obtain better understanding of this table design issue, a preliminary observation was conducted in an individual therapy room. In that room, a table with oval hole was used as a medium to treat twelve autistic children in Autism care center (PLA) Surakarta. It took place in a classroom that applied ABA method. Each child involved in 30-minutes therapy. Type of the room was ordinarily used in autism service centers in Indonesia. It was found that children tend to escape from the table or push the table during therapy.

The child would try to get out of the table and no longer pay attention to the therapist when he or she started to get bored. Thus, the patients' behavior still hampers the goal achievement.

Table with oval hole has advantages and disadvantages. Therefore, it is necessary to elaborate the opinion from the user for developing this product (Caplan, 1990; Langford & McDonagh, 2003). The present study conducted focus group discussion to understand how the table affects autism therapy, and its effectiveness for autism therapy. Additional mat under the table feed was proposed and discussed as an alternative design to prevent a student/patient from pushing the table.

Methods

Focus group discussion (FGD) was conducted with eight professionals of autism in Surakarta to elaborate opinions about the effects of the table with oval hole on autistic children during therapy and its effectiveness for therapy. This method was appropriate to develop a product according to user preferences and evaluations (Caplan, 1990; Langford & McDonagh, 2003). They were two teachers and a special school principal; two directors and a psychologist of autism care center; a professor of autism therapy; and a director of autism clinic. Special schools, care centers, and clinics were represented places to accommodate problems of children with autism. According to Caplan (1990), the participants were selected based on represented population with a similar background of the product user.

The first author acted as the moderator of the discussion in order to achieve the objective of the discussion. The tables and chairs were arranged in circle. This model provides effective communication among all participants and the moderator. Before the discussion, all participants introduced themselves. Moderator explained the objectives of the study, the previous study (Purnamasari, 2018), and preliminary findings. During the discussion, participants should answer a questionnaire. These questions were used as the guideline for discussion. The questions were as follows:

- Please mention the type of autism that is handled by your school/clinic.
- Does your school/clinic use the ABA method for autism therapy?
- Does your school/clinic use ABA table with oval hole during individual therapy? If not, what is the shape of the table used? Please explain the reason?
- What are the advantages and disadvantages of the ABA table with oval hole?
- What advice do you have for ABA table with oval hole for optimum autism assessment?
- What is your opinion on our proposal of redesigning ABA table with oval hole (oval hole will be removed and additional mat will be placed)? (Figure 2)

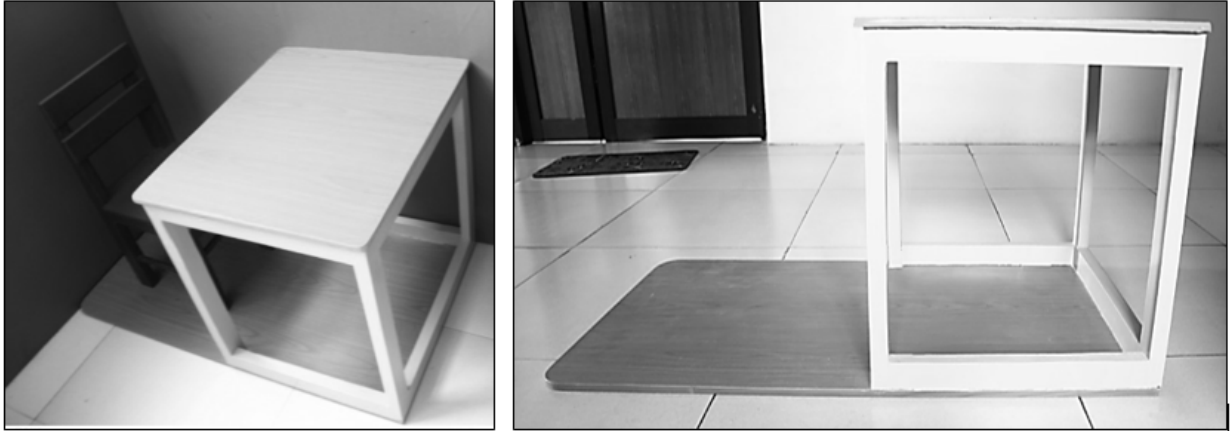


Figure 2. Table with additional mat under feet of table

The discussion was transcribed into notes directly by officer. The transcript would be confirmed by questionnaire that was filled in by participants during discussion. In the analysis process, the questionnaire answer was used to validate the interpretation of the transcript. Mapping and interpretation were applied to analyze data. Krueger's (2014) tools, i.e., words; context; internal consistency; frequency and extensiveness of comments; specificity of comments; the intensity of comments; big ideas, were taken into consideration to interpret the data.

Results and discussions

Six themes mentioned in the questionnaire sheet was discussed.

Type of autism that was handled in the schools/clinics

All symptoms of Autism Spectrum Disorder (ASD) (DSM 5, 2013) were diagnosed in the patient or students. They were deficits in social communication and interaction; and restricted a repetitive patterns in behavior (DSM 5, 2013). Their responses to stimuli (lights, taste, sound, touch, etc.) include hyper- or hypo-reactivity, and unusual interests. The level of autism that was handled consist of level 1-3. According to DSM 5 (2013), each level requires different types of support. Level 3, 2, and 1 require very substantial support, substantial support, and support, respectively.

ABA method and the use of table with oval hole for autistic therapy

75% of schools or clinics applied ABA method to assess their students/patients. 25% of them used this method, especially to level 2-3 autism.

All schools or clinics utilized table with oval hole in particular conditions. Special school, or 10% of them, modified table by locking with a chair. This design is used to control very severe autism behavior in a class with various student's conditions. The class

consisted not only students with autism but also students with other special needs such as sensory impaired disorder, physical disorder, other developmental disorder.

80% of them used table with oval hole only for level 3 autism and at the beginning of the treatment in order to overcome communication difficulties. The teacher or facilitator supported students/patients fully in level 1-2. One of them applied an oval hole to big square table for group. It means that in the big table, there is one oval hole. 10 % of them used table with oval hole for level 2-3 autism. In other words, only in the best conditions or in level 1 that table was not really necessary to use. Since level 1 is a transitional period from treatment to normal conditions, an ordinary table (without oval hole) will be recommended.

Advantages and disadvantages of ABA table with oval hole

Table with oval hole could decrease students'/patients' counterproductive behaviors such as minimum involvement during therapy, leave the table quickly, lack concentration and push the table. In other words, this table encouraged students/patients to be more engaged with the therapy activities. The closer distance between the therapist and the student/patient is helpful for the therapist to instruct and manage the student's behavior.

However, one participant did not agree with this table since it seems to confine the students/patients in a disadvantageous position. This does not meet the principle of ABA intervention i.e, to provide freedom for children and make them enjoy the therapy. As a human being, they need freedom. They may be bored, moreover, their conditions need move more active than ordinary people. This table was not for children's needs but for therapists to ease their job. Even though the table would encourage children to sit quietly during learning, ABA intervention can be done anywhere – without table and chair. Therapist should create many creative strategies to solve the problem.

Design recommendation to modify table with oval hole for optimal autism assessment

To optimize autism therapy process, the size or dimension of the table and also chair should be designed appropriately to each student/patient dimension. The edge of the table should be round. Moreover, soft material can be applied to the top of table and chair. The color should be soft to accommodate students/patients that sensitive to texture stimulation.

The opinion on the proposal to redesigning ABA table with oval hole (the oval hole will be removed and an additional mat under the table feet will be placed)

All participants were interested in table without oval hole and additional mat. However, this type only discourages students/patients, making them pushing or leaving the table. They still could move away from individual treatment. And this is counterproductive to achieve a goal of assessment in each session. The treatment may take more than 30 minutes if students/patients move away many times during the therapy. Therefore, 90% of the participants recommended table with oval hole but in proper design for ASD.

Conclusions

Table with oval hole is necessary to overcome autistic students'/ patient's behavioral outburst and to optimize the therapy session. However, it is necessary to maintain the children's relaxed and non-depressing condition since it is the basic principle of ABA. A space to explore and develop must be provided in an education process. Therefore, modified table with oval hole and additional mat need to be developed in a more friendly design to make autistic students/ patients enjoy the therapy.

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References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. American Psychiatric Pub.
- Barbarese, W.J., Katusic, S.K., & Voigt, R.G. (2006). Autism: A review of the state of the science for pediatric primary health care clinicians. *Archives of Pediatric and Adolescent Medicine*, 160, 1167-1175.
- Bruseberg, A., & McDonagh-Philp, D. (2002). Focus groups to support the industrial/product designer: a review based on current literature and designers' feedback. *Applied ergonomics*, 33(1), 27-38.
- Caplan, S. (1990). Using focus group methodology for ergonomic design. *Ergonomics*, 33(5), 527-533.
- Krueger, R. A. (2014). *Focus groups: A practical guide for applied research*. Sage publications.
- Langford, J., & McDonagh, D. (2003). *Focus groups: Supporting effective product development*. CRC press.
- Larsson, E. V. (2013). Is applied behavior analysis (ABA) and early intensive behavioral intervention (eibi) an effective treatment for autism? a cumulative history of impartial independent reviews. *autism*, 27(1), 168-1792.
- Motiwala, S.S., Gupta, S., Lilly, M.D., Ungar, W.J., & Coyte, P.C. (2006). The cost-effectiveness of expanding intensive behavioural intervention to all autistic children in Ontario. *Healthcare Policy*, 1, 135-151.
- Purnamasari, D. C. (2018, November). The Effect of Adding a Permanent Base and Removing an Oval Hole on a Therapy Table for Autistic Children. In *3rd International Conference on Creative Media, Design and Technology (REKA 2018)*. Atlantis Press.
- Walsh, M. B. (2011). The top 10 reasons children with autism deserve ABA. *Behavior analysis in practice*, 4(1), 72-79.

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