Therap Application to Evaluate Therapy Programs for Autistic Children

Gangsar Ali Daroni[1], Munawir Yususf[2], Gunarhadi[3], Edy Legowo[4]

[1](*Department of Special Education, Graduate School, SebelasMaret University, Indonesia)*
[234](*Department of Special Education, SebelasMaret University, Indonesia)*

Abstract

This study aims to determine (1) how to evaluate the autistic child's therapy program using Therap application, (2) advantage of using Therap applications (3) obstacles in the implementation of the evaluation of autistic children's therapy program using Therap application and (4) therapist's effort to overcome these obstacles. This study is a descriptive qualitative study conducted at five Therap Application users clinics in the cities of Karanganyar and Jakarta. Data collection tools using observation, interviews, and documentation. Resource persons in this research are the therapist and computer administrator. Data analysis uses three steps: data reduction, data presentation, and conclusion. Implementation of the evaluation by filling out the results of existing data on the T-Log menu, then the data will be stored on the server to be automatically recovered. In a certain time, the recap can be seen and evaluated the results of therapy for autistic children. The advantages of using this application are More practical and easy to use, the data can be automatically collected with detail, the data comes with photos, the therapist can communicate through the application, and can know the condition of the child at a distance position. There are obstacles to the use of this application, but the therapist tries to overcome these obstacles so that the evaluation can be optimal.

Keywords: *Therap Application, Autistic child, Evaluation, Therapy*

I. INTRODUCTION

Autism is a neurodevelopmental disorder determined by verbal and nonverbal and social communication dysfunction. The cause of autism has not been found exactly until now [9]. Autistic children have problems in their health conditions such as speech, sleep and gastrointestinal disorders (constipation and eating difficulties), developmental delay, attention/hyperactivity disorder, hypotonia, epilepsy, anxiety, disturbing behavior, pica, and eczema [6]. In addition, autistic children may exhibit aggressive behavior and self-harm, abnormal responses to people, extraordinary attachment to objects, difficulty accepting change, repetitive activity such as flipping, jumping, and hypersensitivity to all five senses [4].

The prevalence of autistic children has steadily increased over the last two decades, with the current estimate of the proportion of children with autism with regular children of 1 in 36. Inherited factors, a history of psychiatric disorders of the elderly, preterm delivery, and fetal exposure to psychotropic or insecticidal drugs are all associated with primary of children with autism. Some measuring tools that can help assess the behavior and symptoms of autistic children include Childhood Autism Rating Scale (CARS), The Autism Spectrum Disorder – Observation for Children (ASD-OC), The Development, Dimensional, and Diagnostic Interview (3di) [11].

Once identified that the child has symptoms of autism, early intervention should probably be given to the child, to maximize the potential and provide support appropriate to the child's condition [13]. Interventions for children with autism spectrum disorders aim to improve social communication and basic core skills through a number of different approaches [8]. The intervention can be in the form of therapy that is tailored to the child's problems such as behavioral therapy, speech therapy, sensory therapy, etc [3].

In Indonesia, there are many clinics, special schools or hospitals that provide therapeutic services for children with autism [2]. Each therapist should identify and assess the child's ability before giving therapy to the child. The therapy program was prepared with a team consisting of therapists, doctors, psychologists and other experts. The program is shown to parents and then approved by the child's parents [1]. Provision of therapy to children with autism done by professionals in the field of therapy. Parents can assist in the implementation of therapy by carrying out instructions given by the therapist to parents to do at home. It aims to optimize the outcome of therapy for autistic children [12].

After the therapy program has been implemented, it is necessary to evaluate the therapy program that has been given to the child [5]. Traditionally, the evaluation was done using a paper recording done by the therapist then the data was collected until the end of the program and the final result was seen. The evaluation process has shortcomings, among others, require extra energy for paper recording at any time, less efficient because it consumes a lot of paper, the data obtained less detail and require a longer time [7].

With the development of science and technology, evaluation of therapeutic programs develops until it can be done using the latest technology that is more effective and efficient [10]. One of the latest technologies that can be used to evaluate a therapy program for autistic children is the Therap application. The therap application is an application that is made to record child development during a therapy program that can be used by professionals who conduct therapy for children. In Indonesia, especially in several cities such as Karanganyar and Jakarta, several therapeutic clinics for children with autism have used this application to carry out evaluations of therapeutic programs for children with autism. Although this application includes new applications, this application is one of the solutions to simplify and make the evaluation of therapy programs for children with autism become more effective, efficient and optimal.

Researchers are interested in knowing (1) how to evaluate the autistic child 's therapy program using Therap Application, (2) advantage of using Therap applications (3) obstacles in the implementation of the evaluation of autistic children' s therapy program using Therap application and (4) therapist 's effort to overcome these obstacles.

II. METHODS

This research is descriptive qualitative research. This research was conducted in autism therapy clinics located in the city of Karanganyar and Jakarta that use the Therap application to evaluate therapeutic programs for children with autism. The number of clinics using this app is 5 clinics. Data collection tools using observation, interviews, and documentation. Resource persons in this research are the therapist and computer administrator. Data analysis is carried out using flow or intertwined analysis models. Interactive analytical techniques flowing or intertwining are data collection, data processing, and conclusion as a cycle process. The steps taken in data analysis include data reduction, data presentation, and conclusion.

III. RESULT AND DISCUSS

A. What is Therap Application?

The Therap application is a web-based application suite designed to provide comprehensive solutions for planning, documentation, reporting, communication and billing needs from organizations that support intellectual disabilities and home and community-based development (HCBS) and other settings. Therap's application software suite is relevant to service organizations that provide long-term support and services to people with intellectual disabilities and developments. This application was developed by a web called www.therapservices.net with offices in the USA.

Every user of this app must first sign up for the web that manages the therap application for a fee. Once you have access rights, then the user can use the application by entering the password provided by the admin.
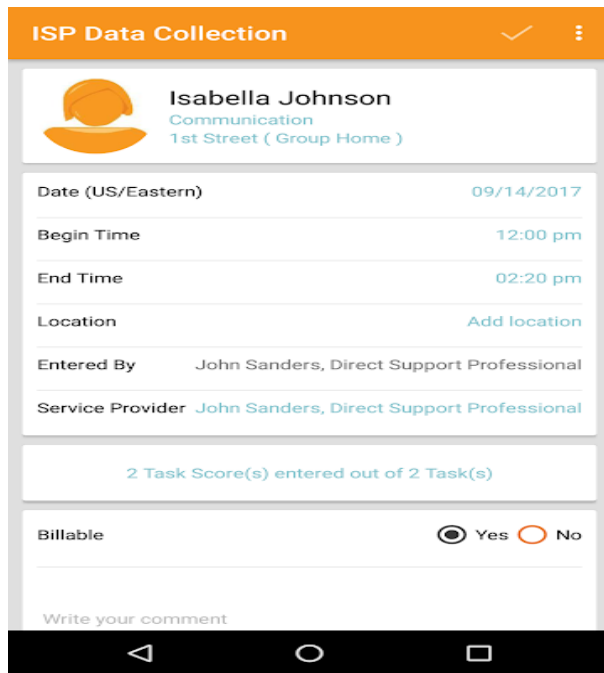
In Indonesia, this application is already owned by some clinic therapy for children with autism. The clinic is spread in several cities such as Jakarta and Karanganyar. The following features in the Therap application:

(Figure 1. Application home page)
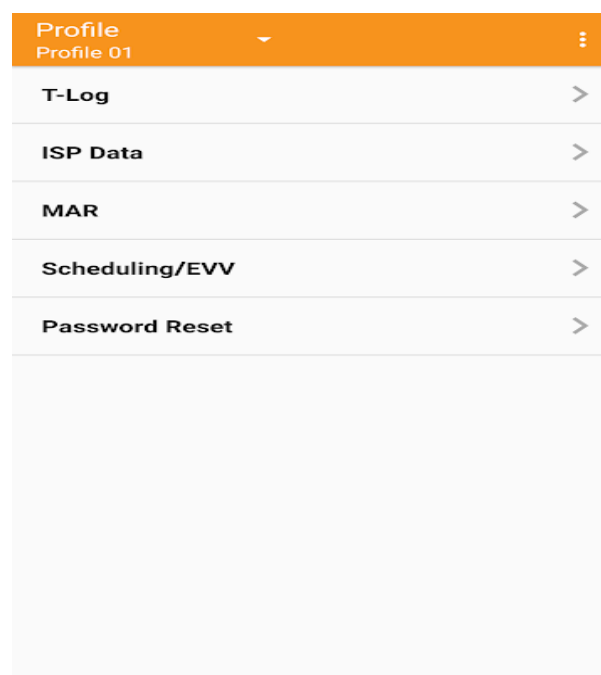
(Figure 2. Features in the Therap Application)

(Figure 3. Client data recorded)

The feature functionality in the Therap application is as follows:

Table 1. Feature Functions in Therap Applications

Feature	Function
T-Log	a) View a list of T-Logs or recording of therapeutic activities performed by another therapist to the client. b) Creating T-Log data or therapeutic data performed by the therapist to the client in detail. This feature is also equipped with photos that can strengthen the results of recording data on the implementation of therapy that can be seen by all therapists. The data of the child during the treatment process is the date of the therapy, when the therapy begins, when the therapy is completed, the name of the therapist, the type of therapy, the location of the therapy, the description of the therapy results, and the child's photo when performing the therapy,
ISP Data	a) Collection of therapeutic service data from any location. b) Verify remote visits online by recording locations via GPS. c) Capture individual images at service locations and add signatures with fingertips or stylus pens.
MAR	a) Akses ke daftar obat yang dijadwalkan. b) Kemampuan untuk Merekam dan mengelola obat & perawatan yang terjadwal.
	c) Pilihan untuk melihat catatan alergi anak, diagnosis, dan gambar obat.
Scheduling/ EVV	a) Access to the list of scheduled drugs. b) Ability to Record and manage scheduled drugs & treatments. c) Options for viewing child allergic records, diagnosis, and medication images.
Reset Password	Used therapists to change their account password.

B. Implementation of Therapy Program Evaluation Using Therap Application

The therap application is used in several clinics in Indonesia to evaluate therapy programs for children with autism. Applications in each clinic or organization are managed by an admin who manages the management of data generated from the application. Each therapist of various skills, each given an account that can be used to access the Therap application.

The therapist team determines the schedule of therapy to the client through the meeting. The schedule is then entered into the scheduling / EVV feature by the admin. Any schedule changes will be updated on this feature. Every therapist who performs therapy with the client, logs in first using the username and password provided by the admin to record therapeutic data. After that the therapist enters the T-Log feature and fills out all forms consisting of the date of therapy, the start of therapy, hours of therapy, name of therapist, type of therapy, location of therapy, description of therapy results, photos of children when carrying out therapy, signatures the therapist is then submitted.

The data can be seen by all therapists, and communication between therapists can be done through the comments in the EVV feature. Data that has been entered by the therapist will enter the Therap application web server which is recapitulated automatically by the admin. Data on child development during the therapy process can be seen at the end of each month in the recap of data that is in the database that the admin has. Evaluation can be done once a month, once every 3 months or every 6 months according to the team agreement.

C. The advantage of Using Therap Applications

The use of Therap applications in the evaluation of therapy programs for autistic children has several advantages, including:
1. More practical and easy to use, because it can be used on each mobile therapist.
2. Data can be automatically collected with detail for each client.
3. Data is equipped with photos that can support the evaluation of the implementation of therapy.
4. Inter-therapist can communicate through the application to see the implementation of therapy performed by other therapists.
5. Can know the condition of the child at a distance position.

D. Obstacles to Use of Therap Applications

Based on the results of observations and interviews that researchers conducted in several autistic therapy clinics in several cities in Indonesia, the use of this application to evaluate the implementation of therapy for autistic children has several obstacles including:

1. Costs are quite expensive to be able to have access rights using this application. Because this application is a product from outside Indonesia, and the owner of this application provides the cost of using this application as specified. The clinic must provide a budget that is not small for the use of this application so that not all clinics in Indonesia are able to buy this application.
2. This application is based on Android, so it can only be used on smartphones that have an Android operating system only. Some types of smartphones cannot install this application.
3. There are still some therapists who have not been able to use this application due to limited knowledge and ability to operate the Android-based smartphone.

E. Therapist's Efforts to Overcome Obstacles

With the obstacles in evaluating the implementation of therapy for children with autism using the Therap application, the clinic has an effort to overcome these obstacles by taking the following steps:

1. Some clinics apply for a budget to the Indonesian government, in addition, they seek sponsorship to help pay for Therap application access fees.
2. Recommend to the therapist to use the phone that can be installed in the Therap application.
3. Provide training to therapists to equip skills in using Therap applications. This training was held by the clinic or organization that used this application in evaluating the program of therapy for children with autism.

IV. CONCLUSION

The Therap application is a web-based application suite designed to help professionals/therapists evaluate the implementation of therapy for autistic children. The therap application has 5 main menu that is T-Log, ISP Data, MAR, EVV and Reset Password. Implementation of evaluation using this application is very easy that is by filling the data of therapy result that exist in menu T-Log, then data will be stored on the server which will recap automatically. In a certain period of time, the recap can be seen and evaluated the results of the implementation of the therapy program for autistic children. The advantages of using this application are More practical and easy to use, the data can be automatically collected with detail, the data comes with photos, the therapist can communicate through the application, and can know the condition of the child at a distance position.

Obstacles in the use of this application is a cost that is quite expensive to be able to have application permissions, can only be used in smartphones that have an Android operating system, and there are still some therapists who have not been able to use the application. Therefore, the therapist attempts to overcome these obstacles by proposing a budget to the government and sponsors. Recommend therapists to use smartphones with an Android operating system, and provide training to therapists in using Therap applications.

REFERENCES

[1] Artika, B.Y., Gunarhadi, & Akhyar, M. (2017). Parents' Role Optimization in Stimulating Autism Children's Development through Family Counseling Program. International Journal of Recent Engineering Science (IJRES), 4(2), 16-19.
[2] Fithri, H. (2011). Religious Therapy as One of An Alternative Ways In Getting Educational Betterment for Children with Autism Spectrum Disorder. Procedia- Social and Behavioral Sciences, 29, 1782-1787. doi: 10.1016/j.sbspro.2011.11.425.
[3] Hashim, S.M., Fikry, A., Ismail, Z., Musa, R., Hashim, R., Sh. Ahmad, S.,...Samat, N. (2014). Humanoids in Autism Therapy: The Child Perspective. Procedia Computer Science. 42, 351-356. doi:10.1016/j.procs.2014.11.073.
[4] Jain, A., Spencer, D., Yang, W., Kelly, J.P., Newschaffer, C.J., Johnson, J. . . Dennen, T. (2014). Injuries Among Children With Autism Spectrum Disorder. Academic Pediatrics. 14(4), 390-397. doi:10.1016/j.acap.2014.03.012.
[5] Mazzei, D., Lazzeri, N., Billeci, L., Igliozzi, R., Mancini, A., Ahluwalia, A., . . . Rossi, D.D. (2011). Development and evaluation of a social robot platform for therapy in autism. 33rd Annual International Conference of the IEEE EMBS Boston, Massachusetts USA. 4515-4518. obtained from https://s3.amazonaws.com/academia.edu.documents/32336710/2011_IEEE_EMBS__Development_and_evaluation_of_a_social_robot_platform_for_therapy_in.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1532515018&Signature=b38aac5P0py5DXFBIZovSFUj4a8%3D&response-content disposition=inline%3B%20filename%3DDevelopment_and_evaluation_of_a_social_r.pdf.
[6] Neumeyer, A.M, Anixt, J., Chan, J., Perrin, J., Murray, D., Bennett, A., . . . Parker, R.A.(2018). Identifying Associations among Co-occurring Medical Conditions in Children with Autism Spectrum Disorders. Academic Pediatrics, 18(5). doi:10.1016/j.acap.2018.06.014.
[7] Odom, S.L., Boyd, B.A., Hall, L.J., Hume, K. (2010). Evaluation of Comprehensive Treatment Models for Individuals with Autism Spectrum Disorders. J Autism Dev Disord, 40, 425–436. doi: 10.1007/s10803-009-0825-1.
[8] Pasco, G. (2018). The value of early intervention for children with autism. Paediatrics and Child Health. doi:10.1016/j.paed.2018.06.001.
[9] Pirzadroozbahani, N., Ahmadi, S.A.Y., Hekmat, H., & Roozbahani, G.A. (2018). Review Autism and KIR genes of the human genome: A brief meta-analysis. The Egyptian of Medicial Human Genetics, 19(3),159-164. doi:10.1016/j.ejmhg.2017.10.005.
[10] Prabowo, D., Utami, E., & Fatta, H.A. (2014). Implementasi Konsep Gamification pada Aplikasi Terapi Autis dengan Metode Applied Behavior Analysis. Citec Journal, 1(3), 204-215.
[11] Sharma, S.R., Gonda, X., & Tarazi, F. (2018). Autism Spectrum Disorder: Classification, Diagnosis, and Therapy. Pharmacology & Therapeutics. 185. doi:10.1016/j.pharmthera.2018.05.007.
[12] Shepherd, D., Landon, J., Goedeke, S., Kelly, T., & Csako, R. (2018). Parents' assessments of their child's autism-related interventions. Research in Autism Spectrum Disorders, 50, 1-10. doi:10.1016/j.rasd.2018.02.005.
[13] Yates, K & Couteur, A.L. (2016). Diagnosing autism/autism spectrum disorders. Paediatrics and Child Health, 26(12), 513-518. doi:10.1016/j.paed.2016.08.004.