INSIGHT OF AUTISM SCREENING, INTERVENTION AND ITS CORRELATION

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Abstract

Autism spectrum disorder is a neurodevelopmental disorder causing an abnormality in one’s social, communication and behavior. It is diagnosed based on early-emerging social and communication impairments and the tendency to behave differently than would a normal child. The global statistics reports an increase in the total statistics from year to year. The main question shed light in this article is “What are the existing autism screening tools that have the correlation with autism intervention?”. For this objective, a methodology based on a systematic review is done to identify the existing type of autism ‘screening’ and intervention. The article search is done from early 1990s to the current year and involves peer-reviewed journals. It is important for parents to seek for early assistance if their child shows symptoms of being autistic. The screening process is essential because early detection of autism may lead to early intervention further enabling a child’s abilities to be improved. Various screening tools accessible online should be able to tell if a child is autistic. More research should focus on the autism screening process and tools to prove to the public about the reliability of certain available screening tools. The objectives of the research are achieved. A lot of information has been obtained throughout this literature review regarding autism screening and intervention. The instruments used in the screening process are typically inexpensive and simple to administer, score, and interpret. The evaluation of the screening measures is based on sensitivity and specificity. Conclusively, early screening is important because it may contribute to early intervention which will increase the possibility of an autistic child having a better future. There should be more research conducted on autism screening itself and the benefits of having an intervention especially in terms of the social and behavior outcome and family relationship. It is hoped that some information regarding autism can be disseminated to the public and further actions such as screening can be done by parents who are concerned about their child development.

Keywords: autism; autism screening tool; autism intervention.

1 INTRODUCTION

Autism is a developmental disorder detected based on social and communication impairments that emerge early on, and the tendency to show the behaviour that is different from that of a normal child [1]. The statistics shows that one in 68 U.S. children has an autism spectrum disorder (ASD) [2]. Children as early as 18 months old can already be diagnosed as autistic, so parents need to consult their doctor as soon as possible if their child shows any symptoms of being autistic. Screening test is performed to verify that the child is an autistic child before they move on to the intervention process [3][4]. The child’s parents or caregiver can look out for any signs of autism if any symptoms are present or if they are suspicious about the child’s behaviour or development. Even though an initial screening can be carried out by accessing screening test or questionnaire that is available online, a potentially autistic child still has to be referred to a family doctor or child psychologist so that full screening can be done. Early intervention for autism is very important to ensure that a child experiences a proper development and to make them stand a chance at leading a normal life [5]. Without early intervention, both parents and the autistic child will tend to feel disappointed as they cannot understand each other’s feelings and they will have some trouble communicating. According to Butter et al.[5] shares that there are many types of Autism interventions, treatments and therapies available as each autistic child is distinctive from one another. For example, behavioural intervention is designed to promote appropriate behaviour; development intervention is designed to target the core deficits that each child might have, and psychological intervention includes talking therapy, creative therapy and cognitive behavioural therapy.
Based on the statement above, one crucial issue emerges—what is the best method that we can adopt to map the outcome through ‘autism screening’ with the most appropriate autism intervention? Thus, this article is written with the aim of identifying information related to the method of autism screening tool available. Apart from that, the information about the intervention method is also elaborated. All in all, the literature involving indexed and peer reviewed journals published from early 1990s to the most recent year will also be reviewed. The purpose of this study is to identify research related to autism screening tools. This paper establishes past literature related to autism that focuses on its screening process and intervention. Section II of this paper introduces the method used in conducting this article review research, while Section III will elaborate on the findings of the literature review. Section IV summarizes the findings and last but not least, the conclusion and potential future research will be highlighted in Section V.

2 METHODOLOGY

The systematic literature review fundamental guideline for software engineering that introduce by Kitchenham & Charters [6] is applied in this study. A systematic review answers a defined research question by collecting and summarizing all empirical evidence that fits pre-specified eligibility criteria. The study methodology is applied through an article published in 2015 [7]. Table 1 below illustrates the criteria and the scope of the research questions posed in this work.

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<th>Item</th>
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<td>R1</td>
<td>What is the intensity of the research activities on autism screening tool?</td>
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<td>What is the intensity of the research activities on autism intervention?</td>
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<td>R3</td>
<td>What are the existing autism screening tools that have correlation with autism intervention?</td>
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<td>R4</td>
<td>What is the research motivation that will be used based on important discoveries obtained through the writing of this article?</td>
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Systematic review defines as a type of literature review that introduce explicit and reproducible methods to systematically search, critically appraise, and synthesize on a specific issue obtain from existing completed and recorded work produced by researchers, scholars and practitioners [7][8]. There are three main phases in systematic review: planning the review; conducting the review; reporting the review. The more in detail process for each phase is shown in Figure 1.

2.1 Search Strategy

An iterative search strategy has been employed in this study and it consists of a few steps as follows:

1 Information Sources
   The content in the paper is obtained through searching online databases. Sources include Google Scholar, PubMed, Sage Journals, Springer and PsychINFO. It is important for researcher to know databases that relevant to the field of autism to produce better findings in this research.

2 Article search in major indexing databases
   The initial search string is autism, autism screening tool and autism intervention. Various related keywords have been used in the search, and these include autism diagnosis, early intervention, early screening, autistic child, developmental disability. In all, anything that related to autism is included in the search for data.

3 Record search results into a text file.

4 Classification articles
   This step reflects to the category of article publications, such as an article from refereed journals, article from reputable conferences, article from a book chapters and technical book.
2.2 Article Selection Criteria

This step ranks the source of papers from highest to the lowest priority, such as articles from refereed and article from reputable conferences. The subjects covered autism screening tool and autism intervention. It is also involving research on the possibility of correlation between these two subjects.

Figure 1. The systematic review phases [6]

3 SUMMARY OF INCLUDED ARTICLES

3.1 Autism Background

The history of Autism began with Eugene Bleuler, a Swiss psychiatrist who was the brainchild behind the word "Autism" in 1906. Epistemologists have come to agree that the term Autism originates from the word "autos" meaning ‘self’ and "isme" meaning 'thinking'. He regards this syndrome as an active withdrawal of social interactions and reality to live in a fantasy world of one's own [8]. In 1943, another psychiatrist at John Hopkins Medical Center from the United States, Leo Kanner described the symptoms of autism and distinguishes it from children who suffer from schizophrenia [9]. Naturally, ASD symptoms usually start in early childhood or specifically the first two years of life and the individuals will have to be assisted in their daily routine. The brain’s information processing is affected when the nerve cells and their synapses that connect and organize are altered in some way. In the DSM V, autism is confined within the autism spectrum (ASDs), as is Asperger syndrome, marked by the lack of interruptions in cognitive development and language, and pervasive developmental disorder, not otherwise specified, diagnosed when the full set of criteria for autism or Asperger syndrome were not met [10].

Early speech or behavioral interventions might offer a solution for children to develop their self-care, social, and communication skills [11]. Despite the fact that there has yet to be a cure, cases of children recovered have been established. Not many children with autism are able to live on their own after reaching adulthood [12]. Globally, autism is estimated to affect 24.8 million people as of 2015, with the chance of occurring four to five times more prevalent in boys than girls. Autism syndromes have been acknowledged globally. Irrespective of the socio-economic, educational, or ethnic status of the child, it can happen to just about anyone. The number of cases reported is on the rise every year. According to Philips [13], autism syndrome is one of the most complicated problems to address. Since the discovery by Kanner in 1943, researchers have been trying to investigate and explain the cause of autism. After almost 6 decades, the specific cause of this syndrome remains a mystery [14].
In a family with autistic child, the pressure can overwhelm the marriage, as parents with autistic children will have to juggle between the necessities of their child and attend to ongoing financial issues. Initially, parents may be concerned over the fact that their child will never be ‘normal’ and there may be some serious disagreements between members of the family on the best course of action they need to take. A study by Illias et al. [15] reported that all mothers who have autistic children began to rely on the government for more support in terms of more special schools for their children, therapeutic services, financial aid, and employment opportunities. They also found it challenging to not be able to access many resources as they resided on the suburbs [15]. It was also found that there were scarce government therapies so they had to turn to private therapists which were definitely more expensive.

3.2 Autism Characteristic

Typical five-year-olds would normally be able to know about other people’s knowledge, feelings, and intentions based on gestures and facial expressions [16]. However, an autistic individual may lack these interpretation skills, leaving them unable to predict or understand other people’s actions or intentions. It is common for autistic children to have difficulty regulating their behavior, so as the result they will unnecessarily and inappropriately tend to cry, have verbal outbursts, or inflict self-injurious behaviors. It is not uncommon too for these individuals to project aggression, demonstrate self-stimulatory behavior or self-injury. However, maturity and education will enable them to gradually learn to control such behaviors and cope with difficult changes in other ways.

Individuals with autism spectrum disorders (ASD) who are fluently verbal do not escape the challenges that emerge in their language and communication [17]. The presence or intensity may vary by age and by individual. Some of these characteristics are found in others who do not have an autism spectrum disorder. With increasing age and increasing communication competency, most of these characteristics will tend to diminish or disappear for those without an autism spectrum disorder. Communication within a social situation goes beyond understanding the words of others [18]. The individual with an autism spectrum disorder may have problems understanding another person’s perspective and interpreting it. During interaction they give no or minimal eye contact; eye contact may be distracting and they speak too loudly or too fast unless told or requested otherwise. Although individuals with autism usually appear physically normal, they demonstrate repetitive motions, called repetitive behaviors [19]. This could include rocking and twirling, hand flapping, and spinning. These movements are movements that they stimulate themselves and are often referred to as stimming. It is a necessary way where a child makes the effort to calm himself down, especially when his senses are overstimulated by factors such as bright lights, noises, and smells. More potentially harmful behaviors, such as biting themselves can also be displayed at times.

Many theories try to explain what function repetitive behaviors serve [1], and the reasons for its increased incidence in autistic people. The reasons often attributed to the causes of repetitive behaviors are stress, fear, and anxiety. There could be many triggers for this, and parents often need to be able to find out the cause of such behaviors. According to Zogbi and Bear [20], neurodevelopment and neurological disorder of an autism people can affect their learning disability. A learning disability is a neurological disorder that affects the brain’s ability to receive, process, store, and respond to information. Teachers then tend to modify the instruction, or some other aspects of the learning environment, to better accommodate a student who is difficult to teach or for some specific reasons. That is why autistic people cannot communicate easily and the way of their understanding differs from ordinary people

3.3 Autism screening tools

There are many tools that can be adopted to assess ASD in young children [3][4][10]. Assessment and diagnosis should be done using multiple screening tools so that the results will be more precise. Diagnostic tools are usually based on two main sources of information—parents’ or caregivers’ descriptions of their child’s development and a professional’s observation of the child’s behavior. Health care providers normally identify these children who are at risk of autism during routine pediatric check-ups. Developmental screening questionnaires and clinical acuity serve as the detection tool. Parents will then be referred to specialists such as neurodevelopmental pediatricians, developmental-behavioral pediatricians, child neurologists so their children can further be diagnosed and assessed. The Modified Checklist for Autism in Toddlers (M-CHAT) is a parent-report checklist that studies the sensory responsiveness, early language and communication, and early joint attention [21]. The M-CHAT was designed to check on children aged 18 to 30 months. The more serious the cognitive
limitation, the more likely the child was to be screened positive on the M-CHAT [1]. Modified Checklist for Autism in Toddlers, Revised, with Follow-Up (M-CHAT-R/F) is an upgrade version of MCHAT that lowers the false positive rate and detects more ASD cases [21]. This upgraded version is valid for children 16-30 months old. Screening Tool for Autism in Two-Year-Olds (STAT) is an interactive screening measure for autism that studies autistic children’s social and communicative behaviors in the areas of play, imitation skills, requesting and directing attention [22]. The purpose is to screen for autism in children between 24 and 36 months of age. The STAT highlights strong psychometric properties and shows promising utility as a Level 2 screening measure for autism. It helps community service providers who work with young children when they need to evaluate or intervene, and it also helps those who have experience with autism.

Childhood Autism Rating Scale (CARS) [23] is one of the great assessment tools of autism diagnosis. CARS developed by Eric Schopler, Robert Reichier and Barbara Rochen Renner, is normally used with children aged 2 years and above. It also has the best psychometric support for children with low functioning autism (LFA). There are 15 characteristics evaluated by this scale which include relationship to people, emotional response, adaptation to change, verbal and non-verbal communication, and level and consistency of intellectual response and general impressions rating of the individual. The Gilliam Autism Rating Scale (GARS) [24] is a behavioral checklist that parents, teachers, and professionals can use to discriminate individuals who are autistic from those diagnosed with other developmental disabilities. There are 56 items in the questionnaire and they are divided into four scales: the Social Interaction, Communication, and Stereotyped Behaviors scale that rates the child’s current, typical behaviors, and the Developmental Disturbances scale that rates past severe maladaptive behaviors [1]. GARS-2 is a norm-referenced instrument that helps teachers and clinicians to identify, diagnose autism and estimate the severity of the child’s disorder. It is suitable for individuals aged 3 years to 22 years. The assessment consists of 42 clearly stated items describing the characteristic behaviours of a person with autism. The items are grouped into three subtests consisting of stereotyped behaviour, communication and social interaction. It has strong psychometric characteristics confirmed through studies that focus on the test's reliability and validity.

ATEC is a caregiver-administered questionnaire designed to measure changes in severity of ASD after subjects have undergone treatment [23]. It is longitudinal assessments that require caregivers to identify and track the severity of individuals with ASD. This enables caregiver to give feedback about the effectiveness of the treatments and therapies. There are four subtests in ATEC: I. Speech/Language Communication (14 items); II. Sociability (20 items); III. Sensory/Cognitive Awareness (18 items); and IV. Health/Physical/Behavior (25 items). A decrease in ATEC total score indicates that the participants’ symptoms have improved. The Autism Diagnostic Interview-Revised (ADI-R) is the revised version of the Autism Diagnostic Interview [25]. It is modified so that it can suit children with mental ages from about 18 months into adulthood and linked with ICD-10 and DSM-IV criteria. ADI-R is the most widely used diagnostic instrument in autism research. Its algorithm differentiates between autistic and non-autistic children. It is comprised of 93 items concerning Early Development, Language or Communication, Reciprocal Social Interactions, and Restricted, Repetitive Behaviours and Interests.

### 3.4 Early Intervention for autism

Early intervention is a process of providing services, education and support to children who are at risk or experiencing slow pace in physical or mental development that will affect development and hinder their learning [5]. The initial service or intervention program provided is to meet the needs of children and families with autism children in five areas of development, namely physical, cognitive, communication, social and emotional development and adaptation through various therapies or services [26], such as work-therapy, physiotherapy, speech therapies and family support services. According to Dawson, early interventions can reduce the impacts of slowness in development, and even prevent them from becoming more serious [19]. In addition, early intervention can also maximize the potential of children with special needs and reduce the burden of society.

There are four major goals of early intervention. First, the initial intervention intend to provide support to the family [23]. Through this intervention, it is able to support the development of children. Second, early intervention is to improve the development of children in main areas such as communication and mobility. Third, is to increase the children confidence, and latter, is to prevent future problems. Therefore, it is undeniable that early intervention plays a vital role in special needs children, including autistic children. Wing has introduced a wider concept, namely Autistic Spectrum Disorders or Autistic Spectrum Disorder (ASD) [27]. Therefore, early intervention of autistic children is very important.
Through the introduction of Autistic Spectrum Disorders concept, changes in diagnostic criteria and awareness raise, and knowledge among professionals and parents, the development of specific services and the rate of prevalence of autism was increased. Along with the raising in prevalence and awareness of the importance of early intervention, various studies have been conducted on appropriate intervention practices for autistic children in recent times, such as Applied Behavior Analysis (ABA), Discrete Trial Training, Picture Exchange Communication System (PECS) and Alternative Program for Pre-schoolers and Parents (LEAP)

3.4.1 Applied Behaviour Analysis

Applied Behaviour Analysis (ABA) therapy is also known as the Lovaas method based on the "operant conditioning" theory pioneered by Burrhus Fredric Skinner (1904-1990). The basis in theory developed by Skinner is, one's behaviour can be manipulated by rewards and penalties [28]. The history of this intervention has been carried out by Lovaas with her team in 1987. The results of their studies on a group of autism children found that, the behaviour of autism children could be formed without the pursuit of violence, instead, use the reward for the positive behaviours shown. Autism children failed to focus on other people especially during the interaction. Therefore, it is important to provide therapy to children consistently [11]. The purpose of the provision of therapy to autism children was to reduce their vulnerability by improving their focus while in touch with others. Consistently exercised training will help these children increase their focus in daily activities especially in accepting the given lessons, helping these children in socializing and adapting to their social environment [29]. An important component in ABA is using the ABC model of Antecedent, Behaviour and Consequence [28]. Antecedent is everything that happens before the behavioural targets occur or also named as stimuli. Behaviour is the act that results from stimuli. Consequence is the result of any behaviour obtained after the targeted behaviour occurs. An analogy that can be done to describe ABA therapy is when a thirsty child asks for water. Water is a stimulant to thirst. Behaviour refers to the acts of the child drinking while the consequence refers to the loss of thirst after the child drank water. Therefore, based on ABA therapy, to stimulate autistic children, the stimulus given should be consistent so that it can have a positive effect on the development of the child.

3.4.2 Picture Exchange Communication System (PECS)

PECS is a six-phase program to develop children's speaking skills and enable them to communicate [30]. Each phases should go through in order. Based on previous studies conducted by Magiati and Howlin, there has been an increase in the number of autistic children's vocabulary as well as redcing undesirable behavior [17]. This suggests that this program is best used by teachers in the classroom to help them deal with speech and language problems. Some autistic children cannot develop their own speech skills and require a communication system related to their experience, environment and their interactions with adults [14]. This shows that autistic children need individual lessons. Autistic children unable to develop their speech skills automatically as other typical children but can form their own communication. Usually, they will use body movement and expression as a medium of communication. Therefore, teachers need to understand and having knowledge of this kind of communication with autism child. Activities such as looking at the teacher's face when teaching, looking at a position (not necessarily eye-contact) and putting their hands on a place and praising can help them develop indirect speaking skills.

3.4.3 Discrete Trial Training (DTT)

DTT is the best technique of behavior analysis to improve the autism children skills. DTT is a program that emphasizes the formation of highly complex skills into skills with smaller units and teaches them with repeated practice. DDT technique has been used since 1920 but began to use for children's learning in 1950[18]. Although this technique was introduced more than 80 years ago by Lovaas and friends (1971,1081,1987), this intervention method became popular when used as a learning system for autism children. This method is also the favoured way of early intervention from the applied behaviour analysis (ABA) method for the community. Discrete in DTT got its name because every exercise performed will have signs of cultivation. Based on the three sets of terminology in ABA, discrete trial is an instruction unit consisting of antecedent, response and effect [31]. In the three terminology, there are three other terminology groups that are discrete trial i.e: (a) an antecedent stimulus, (b) a prompt, (c) a response, (d) a consequence, and (e) intertrial interval. An antecedent stimulus is anything around us that can cause reaction, either in the form of a vocal stimulus, form of a question like "what do you want" or a non-vocal stimulus. When the child responds correctly, they will receive a reward in return for doing what has been ordered and the antecedent stimulus will be a
discriminatory stimulus or S-1. Prompt is an additional stimulus provided along with an antecedent stimulus which will then work to help autistic children respond. For example, a teacher will prepare a vowel model to help autism children respond to questions by saying "cookies". The child will echo prompt, but unperfect vocals from "cook" to "coo", to "co" and to the letter "c" and, eventually they will not speak. The goal is to transfer the stimulus control from the prompt to the SD, so that the child can respond correctly to the question with a prompt. Responses may occur whether there is an answer or not. It is usually categorized as a correct or incorrect response or fails to respond. For example, if a child responds "cookie" to the antecedent stimulus "what you want", then the child's response is correct. The effect of the question depends on the response of the autistic children. When the child responds correctly, the effect is appreciation, applause and encouragement. If the response is wrong, then the consequences are the answers like "no","try again" and others. This intervention method occurs after the effect is seen before the other discrete trial.

3.4.4 Learning experience: Alternative Program for Pre-schoolers and Parents (LEAP)

LEAP is one of the EIBI or Early Intensive Behaviour Intervention models that make learning a priority in school compared to home [32]. With LEAP's pre-school service method, autism children are integrated with adults to be co-trained. With LEAP method, there is strong intervention to improve social skills through ABA technique. Although this method has many advantages and disadvantages to autism children, the main point of practical theory and implementation is based on the child's social development. Therefore, the application of this theory is on the central social deficit. The LEAP model also uses reinforcement teaching techniques and stimulation controls. The underlying principle according to Strain [33] is (1) emphasizing the benefits gained by autistic children after participating in the intervention; (2) children who have autism become better if the intervention is done consistently at home, school or in society; (3) better results when teachers and parents work together and (4) autistic children can mix with their friends.

4 REFLECTIONS ON RESEARCH QUESTIONS

A. What is the intensity of the research activities on autism screening tool?

Answer: Through the article search, it is found that CHAT [20] is the earliest 'screening tool' adopted in the European countries. This autism detection tool was developed by a psychologist, Baron-Cohen in the early 90s. Twenty years later, immediately after CHAT was developed, this gives a positive implication towards the development of other screening tools. This statement can be proven through an article written by Williams and Brayne[3]. In the context of implementation, the author finds that the screening tools reported in several articles can be used in three different situations. They are in context, targeting at autistic children in terms of their 'pre-school', 'primary school' backgrounds and 'direct observation' [3][4]. The classification into three different situations also targets at more specific ages as early as 18 months to 12 years old. Author finds that there are six 'autism screening tools' targeting at autistic children aged five years namely, Autism behavior checklist, TIDOS, ABII, SCQ [3][10] and ATEC [34].

B. What is the intensity of the research activities on autism intervention?

Answer: There are many studies done for the past years that met the purpose of this research. All studies were dominated in the United States of America and Europe. Early intervention for autistic children is crucial in making them feel that their lives are meaningful. The outcome of research reported in an article [35] that 'Children with autism -appropriate education and who receive support at major developmental stages are more likely to develop vital social skills and would give better reactions in the society.' For this article, the author does not intend to elaborate on any detailed information about autism intervention. For details regarding autism intervention, we can refer to the article published by the author [7][30]. There are many interventions that are very relevant in helping these autistic children. Autism intervention approaches such as Applied Behavior Analysis [29][36], TEACCH [28][37], LEAP [38], PECS [17] and DTI[18] are found to be very popular and reported in various articles [3]. These interventions, if implemented consistently and appropriately with the needs of autistic children, will definitely give some positive implications to their self-development.

C. What are the existing autism screening tools that have correlation with autism intervention?

Answer: To answer this research question, close observation is required for the items on the screening tools. The author's observation on 'autism screening tools' finds that only 1 is specifically
related, which is ATEC instrument [23][39]. This selection is caused by the fact that the question items stated on the ‘instrument’ clearly and directly target at 4 main categories of issues surrounding autism, that is in terms of social, communication, sensory and behavior. This statement is supported by article [40] stating that this detection tool does not only work to detect the intervention development for autistic children but also it can be used as autism’s diagnostic tool.

D. What research motivations can be drawn from existing research?

Answer: Every article emphasized on the important of early screening and early intervention. The authors positively think that there is a need for an adaptive component as the innovation of mapping method between the profile background of autistic children and autism intervention method. Therefore, as the next step, we plan on implementing research on the development of a learning application which applies the ‘adaptive’ component in helping the caretakers of autistic children to give appropriate form of intervention. Authors also plans on using an important input reported through a series of publication through the studies of [7] and [41]. The following diagram shows a visual about the proposed framework of the development of the application of prototype learning.

5 CONCLUSIONS

The objectives of the research are achieved. A lot of information has been obtained throughout this literature review regarding autism screening and intervention. The instruments used in the screening process are typically inexpensive and simple to administer, score, and interpret. Screening measures are often evaluated based on sensitivity and specificity. Most of such instruments utilize parent- or teacher-report to obtain relevant information. An important of early screening because it may contribute to early intervention which will increase the possibility of the autistic child to have a better future. Research shows that 75–95% of children who receive early intensive behavioral intervention develop useful speech by age 5 [19][3]. Youth with ASD often report a desire for more peer social interaction and may also express poor social support and more loneliness than their typically developing peers [10].

The social impairments in individuals with ASD are diverse and involve speech, linguistic conventions and interpersonal interaction. Interventions based on principles of applied behavior analysis have been shown to improve functional communication skills in children with ASD and decrease problematic behaviors such as aggression [18]. Social skills training (SST) is one type of child specific intervention. This intervention involves teaching specific skills (e.g., maintaining eye contact, initiating conversation) through behavioral and social learning techniques [35]. Our recommendation is there should have more research on autism screening itself and the benefits of having intervention especially regarding social and behavior outcome and family relationship. Hopefully, this article able to share some information regarding autism to public and action will be taken by parents who concern about their child development or social problem to screen for possibility of autism.

REFERENCES


